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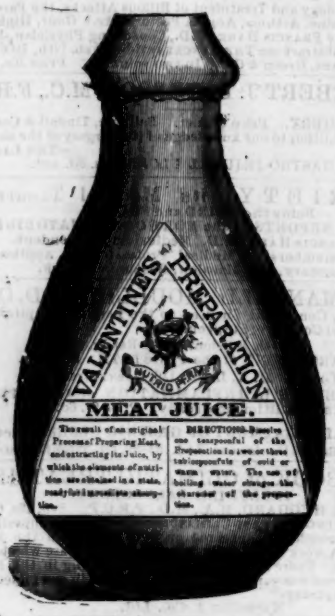

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A Lecture ON HEREDITY AND INSANITY.

Being the last of a Series of Six Lectures on Heredity delivered at the Royal Institution in January and February, 1911,

BY F. W. MOTT, M.D., F.R.C.P. LOND., F.R.S.,

PATHOLOGIST TO THE LONDON COUNTY ASYLUMS; PHYSICIAN TO CHARING CROSS HOSPITAL; AND FULLERIAN PROFESSOR, ROYAL INSTITUTION.

IN this my last lecture on Heredity I propose to deal with the subject in regard to its social and economical aspects as affecting civilised humanity. Last week I gave you some striking examples of the sudden appearance, apparently as sports, of congenital defects, abnormalities, and diseases which were transmitted through several, and in some instances through many, generations. Why, it may be asked, do these conditions not become general? Natural selection and survival of the fittest together with the constant tendency to regression to the normal average of the race is the answer. In the long procession of ages evolution has made man as he is with five toes and five fingers, and of an average stature varying from 5 to 6 ft., consequently there is always that tendency operating to maintain the normal average of the race, and the continuous operation of inheritance in the maintenance of specific racial stability is one of the biggest factors in heredity.

NATURAL SELECTION AND PREVENTION OF PERPETUATION OF POOR TYPES.

We may now ask the question, How has nature prevented the perpetuation of poor types in man? In fact, in what way has man had to struggle for existence? All through history we shall find that as among animals and plants, so with man, the great struggle has been in the same species—viz., man with man. So the evolution of mental attributes, intelligence, quickness of perception, courage, memory, and will power, have become gradually as essential in the struggle for existence and propagation as longevity, resistance to disease, and physical strength. It is the *brainy* rather than the *bulky* than can now survive and propagate.

The great centres of civilisation and human progress have in the past especially been built up in those regions of the earth where Nature has provided a great store of energy which can readily be utilised and converted into human energy—e.g., through ages and ages the Nile provided by its fertilising agency food for millions upon millions of human beings. But where with a lavish hand Nature provides the means for unlimited individual lives, and therefore almost unlimited propagation of the species, it enforces a constant and severe struggle for existence by which if Nature's methods are not interfered with only those possessing such mental and bodily conditions suitable for the struggle survive. In this way blood-thirstiness, craftiness, ferocity, and animal passions, combined with bodily strength and resistance to injury and disease, would in earlier times be the endowments which would best be adapted for survival.

NATURE'S MODES OF SELECTION.

However, men who gathered together in large numbers, especially when forming conquering armies, are sooner or later visited by more terrible (because unseen) foes than these human enemies. Deadly germs or habits to which either the conquering or the conquered have in the long procession of generation after generation gradually become immune, finding a new and suitable soil upon which to develop, devastate and destroy the bold and bloodthirsty as well as the cowardly and the superstitious; all alike, from the highest to the lowest, are swept away by epidemic diseases. This is well exemplified by Holbein's picture of the Dance of Death. Wars, famine, plague, spotted typhus, small-pox, syphilis, tuberculosis, malaria, and other diseases, as well as narcotics, have long been the scourges of densely populated countries. Many of the diseases are filth-begotten. Consequently those individual communities and races who have a better chance of survival in the struggle for existence are those who are most intelligent and cleanly in their habits. The recent Russo-Japanese war is the first on record in which one nation lost more men from injury than disease. This was due to the extraordinary intelligence and cleanliness of the Japanese in the conduct of their campaign, which largely contributed to their success.

During the progress of wars there is little opportunity for knowledge and learning to be displayed, yet if a nation possesses ancestral stocks endowed with inborn intellectual greatness, it is only latent during these periods of national stress awaiting its opportunity of shining forth. This nation, impoverished by two centuries of bloody wars at home and abroad, by famine and epidemic disease, threw off the yoke of tyranny with the Reformation, and following this appeared in England an unrivalled period of intellectual development. Spenser, Milton, Shakespeare, Marlowe, Bacon, Ben Jonson, and a host of other stars of lesser magnitude blazoned forth to enlighten the world for all time. The history of the world shows that nations decay and die more often from prosperity and luxury than from striving and adversity.

MAN'S CONTROL OF NATURE IN RELATION TO NATURAL SELECTION.

Man by his discovery of the causes and prevention of disease, and his power of acquiring, accumulating, and distributing energy by harnessing the forces of Nature, has effected a control over Nature and her methods of natural selection. Hitherto Nature, unmindful of the individual and mindful only of the species in its operation of survival of the fittest, said to the blind, the halt, the lame, the diseased, the feeble of mind and body, "Thou shalt not live." In this respect Nature had no choice; her only prevention of multiplication of the unfit was to exterminate them. But civilised man, by his control of Nature's process of selection, has interfered with the laws of natural selection and survival of the fittest, and unless, as Ray Lankester says, man enters fully into the possession of his kingdom and prevents the perpetuation and multiplication of poor types, racial degeneration must follow. The proper attitude to take up in this question as regards the perpetuation of poor types, according to a well-known journalist, is that laid down by Huxley: "We are sorry for you, we will do our best for you (in so doing we elevate ourselves, since mercy blesses him that gives and him that takes), but we deny you the right to parentage. You may live, but you must not propagate."

To no class of people does this principle apply with greater force and urgency than to the mentally defective or feeble-minded. It is only within the last century that the feeble-minded have had as much chance of survival for themselves or prospect of handing down their mental and physical defects to successive generations. But all these causes which by Nature's mode of selection weed out the poor types have been controlled by man without supplying any alternative scheme of selection such as he uses with success in his breeding of domestic animals when he employs only the best types for propagating. At the present time in Great Britain restriction of families is occurring in one-half or two-thirds of the people, including nearly all the best, while children are being freely born to the feeble-minded, to the pauper, to the alien Jew, to the Irish Roman Catholic, to the thriftless casual labourers, to the criminals and others generally the denizens of one-roomed tenements of our great cities. This particular 25 per cent. of our population, Professor Karl Pearson keeps warning us, is producing 50 per cent. of our children, and if this goes on must lead to national deterioration and degeneracy.

HEREDITY IN RELATION TO FEEBLE-MINDEDNESS AND INSANITY.

Before proceeding to the facts which I myself have collected regarding the heredity of insanity and feeble-mindedness, let me cite two remarkable instances of the evil inheritance of two separate women.

Professor Poelmann of Bonn has recorded the case of a woman, who was a confirmed drunkard and who died early in the nineteenth century, who was the direct ancestor of 834 persons. Of these 700 were known, 157 were illegitimate, 162 were professional paupers, 64 were paupers, 181 were women on the streets, 7 were condemned to death for murder, and 76 were convicted of lesser crimes.

Then there is the famous Juke's family. Ada Juke, known as the "mother of criminals," left 1200 direct descendants

of whom nearly 1000 were criminals, paupers, inebriates, insane, or on the streets. The cost to the State directly in consequence of this inheritance was £260,000, while the indirect loss cannot be estimated. But these are only extraordinary and isolated instances of many.

The reading by the general public of such books as the Whethams' "Family and the Nation," the growing interest shown by the public in the work carried out by the Galton-Pearson school of eugenics, together with the publicity which controversial questions of heredity and transmission of acquired diseases have obtained, have done something to awaken the public conscience and the Government, but probably nothing has appealed more to the thinking man, and, we should hope, voter, than the rapid addition to the rates for the maintenance of lunatic paupers and feeble-minded.

Whetham remarks: "According to the mid-Victorian concept a man was either sane or insane—quite mad or completely cured. How he became mad, how completely he was cured were not taken into consideration. [I am afraid the Lunacy Laws and their application are still of that epoch.] When he was once discharged from the asylum, like the man in the old song—

> 'Whither he went and how he fared
> Nobody knew and nobody cared.'

Such a method of treatment has had its effect in the extension of inheritance of mental inferiority. The Commissioners estimated that the number of those persons who, while not certifiably insane, are suffering from mental defect is about 150,000, to which must be added at least another 150,000 in the asylums as well as those who have been in asylums and have been discharged."

Moreover, according to a report of Dr. Branthwaite, upwards of 62 per cent. of the persons committed to reformatories under the Inebriates Act are found to be insane or defective in varying degree; and from a study of hundreds of portraits of inebriates on the black list I am convinced that quite that proportion of such chronic alcoholics are feeble-minded degenerates frequently of a lower type than the lunatics certified and sent to asylums.

ALCOHOLISM AND INSANITY.

The general opinion, indeed, of the experts who gave evidence before the Royal Commission on the Feeble-minded was that alcoholism in one or both parents exerts its influence mainly upon the vitality of the children. It is a question, however, how far this is due to neglect, and whether the children of drunken parents, if removed from parental influence and cared for, would show a defective vitality.

The proposition which is so often made that acohol is the principal cause of insanity should, in my opinion, be re-stated as the principal cause of admissions to asylums. There are many facts which show that the high percentage, 20–30, given by some authorities and the Commissioners in Lunacy of alcohol as the effective cause of insanity is erroneous. Alcohol in the majority of cases is only a co-efficient, and an inherited potential mental instability in these cases is the efficient cause. In support of my argument I would refer to the results of a comparison of 2000 post-mortem examinations made at Charing Cross Hospital, among which there were 110 cases of advanced cirrhosis of the liver, in the great majority of cases (60 per cent.) with dropsy, and accompanied by a history of prolonged abuse of alcohol. In my asylum experience there were relatively *very few* cases of cirrhosis of the liver and only one case so far advanced as to be accompanied by dropsy, and that was in a notorious police-court character who was convicted nearly 400 times before she was found incapable of taking care of herself. If she served no other useful purpose she was a valuable object-lesson of the inefficiency of the liquor laws. In addition to this evidence true alcoholic dementia of a permanent nature is comparatively a very infrequent condition according to my experience. Then I should like to allude to the fact that Dr. Bevan Lewis, Dr. P. W. Macdonald and Dr. W. C. Sullivan have each independently shown that there is more insanity, more pauperism, less crime and less drink in rural districts than in industrial centres and maritime populations, where there is more drunkenness, more crime, less pauperism, and less insanity. If we cannot convict alcoholism of being the effective cause of insanity, we certainly can of most crimes, especially of violence. Whereas drink and crime are relatively rare among Quakers and Jews, insanity is prevalent; this may be due to intermarriage of unsound stocks. I have shown that at Colney Hatch Asylum, where there are close on 500 Jews and 2000 Christian inmates, heredity is a more important factor in the former than in the latter.

I have repeatedly observed that a quantity of alcohol which may be consumed daily by a man of inherited sound mind without apparent harm is sufficient to make a potential lunatic anti-social or certifiable. It follows, therefore, that alcohol acts as an eliminator of the unstable, the defective, and those who lack control of the animal passions. In fact, Archdall Reid in his interesting work on Heredity argues with much cogency that alcohol weeds out great numbers of individuals of a particular type, those most susceptible to its charm and to its poisonous effects upon the mind, and he reasons that alcohol, like disease, should be a cause of productive evolution. Every race, he affirms, that has had the experience of alcohol is temperate in the presence of an abundant supply in proportion to the length and severity of its past experience of the poison. This, according to Reid, is Nature's successful scheme of Temperance Reform.

Alcohol is the most effective weapon civilised man has to wipe out inferior and savage races who have previously had no experience of it.

There is no proof that the drink habit is transmitted to the offspring. I have observed that a large number of children of drunkards are total abstainers. If they take to drink it is because they inherit that weak will power and lack of moral sense whereby they, like their parent, are unable to resist the temptation to drink and acquire a vicious habit which, in spite of the misery caused to themselves and others, they are unable to resist and overcome.

TUBERCULOSIS AND INSANITY.

Another cause which in the past has been a powerful agent in the elimination of the feeble-minded and the lunatic is tuberculosis. My observations[1] on the relation of tuberculosis and insanity are based upon the collected reports of all the London County asylums with a population of nearly 20,000 lunatics extending over a period of five years. There can be no doubt that tuberculosis is especially prone to affect the insane, particularly individuals suffering from certain types of insanity—viz., imbecility, adolescent insanity, and the depressed melancholic types. Indeed, the death-rate from pulmonary tuberculosis for the insane between the ages of 15 and 35 is about 15 times that of the sane for the same age-period. It was formerly stated that the lunatics acquire the disease in the overcrowded, insanitary asylums. This is not the case; the conditions are much more sanitary than in their own homes, both as regards air-space, ventilation, and nutritious food. Moreover, it is rare indeed that a nurse or attendant of the 1800 employed suffers from consumption, and there is no proof in the few instances which have occurred that they have acquired the disease owing to their occupation. Many patients die in the asylums, having been resident there from 30 to 50 years, and show no trace of tuberculosis. This only proves that the soil as well as the seed is essential for the acquirement of this disease. Tuberculosis in the insane is due in part to an inherent nutritional deficiency, for tuberculosis and insanity affect both rich and poor. In speaking of an *inherent* nutritional deficiency I refer to a failure to assimilate food when it can be obtained in abundance. There is, however, a definite correlation between pauperism and tuberculosis and pauperism and insanity. In such case deficient supply of nutritious food is an important factor.

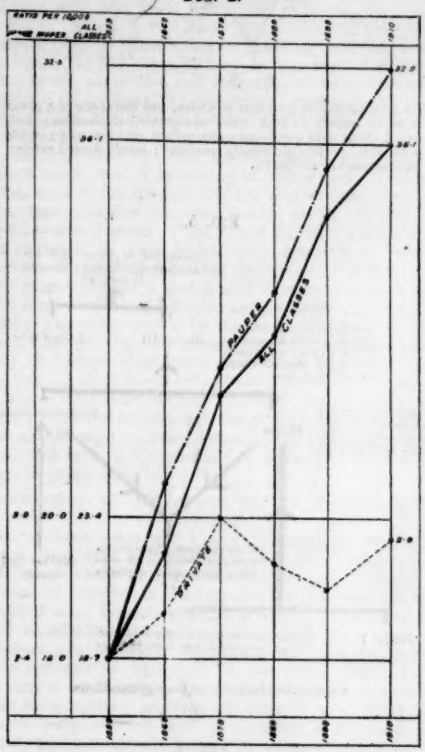
The great decline in the tuberculosis death-rate in the population which has taken place during the last 30 years is undoubtedly due to the improvement of the general social conditions of the people—i.e., the better housing of the poor, the improvements of the conditions of light and ventilation in workshop and factory, combined with cheaper food and the fall in the drink bill. Though we see this constant fall has been taking place for many years, do we see a corresponding fall in the number of lunatics and feeble-minded? Let me show you a chart (Fig. 1) indicating what has happened: it is taken from the report of the Commissioners in Lunacy. If alcohol and tuberculosis were the main causes of insanity, surely we should have had a fall, but here we have a constant rise, and this tends to prove my point—that Nature's mode of selection having been improved away by man's intelligence, he must exercise it still further by denying civic rights of propagation to certain degenerate types.

[1] Archives of Neurology, vol. iv.

INSANITY AND SOCIETY.

What is insanity? We know so little about the minute and subtle physiological actions of the brain as an organ of the mind that we are unable to interpret the derangements and departures from the normal underlying the true insanities. We do know that all the nervous units or neurons are present at birth with all their inborn potentialities. We also know that low-grade imbeciles and idiots, as a rule, are born with an insufficiency in numbers and a deficiency in developmental powers of the nervous units or neurons connected with the higher functions of the mind—a condition which no amount of education or feeding can rectify, because there was a failure in the germinal determinants of those nervous

FIG. 1.



Showing comparative variations in the proportion of the insane in England and Wales (and of the pauper and private classes respectively) to the total population, 1859-1910.

structures in the fertilised egg cell; for, as Thompson says, there is a general agreement among biologists that inborn variations which give every organism its individuality are the expression of changes in the intricate architecture of the germ plasm. This condition of amentia, or lack of mind, may present itself in several grades—viz., the microcephalic idiot and sometimes the hydrocephalic idiot, in which the animal instincts are alone retained; the low-grade imbecile, who may also be an epileptic or criminal; the high-grade imbecile, who may also be an epileptic or criminal. The last-named are the most dangerous from a racial point of view because they are not segregated, and breed criminals, lunatics, drunkards, and the unemployable. I do not mean to affirm that all high-grade imbeciles are of this character. Many of those who are intellectually deficient are not morally deficient; but where by birth and nurture they are irremediably defective morally and intellectually it is useless trying to make them fit for social privileges. Again, there are those who are not intellectually deficient but who are morally defective, born criminals or perverts.

GENIUS AND INSANITY.

An individual is considered insane whose conduct is anti-social when, owing to a morbid or deranged state of his mind, he no longer thinks, feels, or acts in accordance with the usages and customs of the society to which he belongs. It is, however, hard to draw a line between eccentricity and insanity on the one hand, and insanity and crime on the other. Each are manifestations of a mental degeneracy, and may exist separately or combined. Many eccentric degenerates are insane, but are tolerated and even, in some notorious cases, adored by society, because combined with their madness there is often a streak of genius. Some of the most brilliant men in arts, science, and literature have either been insane themselves (e.g., Schumann, Lamb, Nietsche) or have come from parents who were insane (Turner, Bacon), or there was a taint in the ancestral stocks. Men like Napoleon and Julius Cæsar were said to be epileptics; Mohamet and Martin Luther had hallucinations. Yet these men have been the foremost in making the world's history. In our times we have reason to thank a mad king for the discovery of the musical genius of Wagner, and for having made Munich the Mecca of musicians. It is true therefore that "great genius and madness are often close akin," but it is also true, as Maudsley affirms, that often the genius which is thus closely allied to insanity is of an inferior order—intense, narrow, hysterical, explosive, not calm, large, whole, and constructive. Between veritable madmen who exhibit fitful flashes of genius, madness streaked with genius, and persons with real genius who display eccentricities of thought, feeling, and conduct that speak of madness, there are a number and variety of persons who are clever but flighty, talented but unstable, intense but narrow, earnest but fanatical, all sorts of persons who, plunging into new movements good or bad and pursuing them with intemperate, perhaps distempered, zeal, lack the just balance of the faculties, the calm equilibrium of a stable mental organisation, the true perception or mean of nature "which is the highest sanity." Maudsley further asks: "What comparison is possible between Chateaubriand and Shakespeare, between Jean Jacques Rousseau and Goethe?"

I will now throw on the screen a slide (Fig. 2) illustrating a pedigree of insanity and genius, and I may say that the genius in this case possessed in a high degree the calm equilibrium of a stable mental organisation.

Here is the pedigree (Fig. 3) of a great man who lived to a great age, who married beneath him, and we see the elimination of the stock. His daughter was drunken and immoral; her daughter was drunken, immoral, and insane. By her first husband she had two children born dead, by her second no children, so the stock was terminated.

According to a recent writer on the madness of Robert Schumann it is more correct to regard the creative faculties of this musical genius and his constitutional mental disease as concomitant but independent phenomena. His genius shows itself, not in consequence of the mental malformation, but in spite of it.

Mlle. Robinovitch, in an interesting paper La Genèse du Genie, showed that of 74 great geniuses only ten were first-born. As a rule, the parents of great men are of ripe age when they are born; in fact, conception takes place when cellular potential is at the maximum.

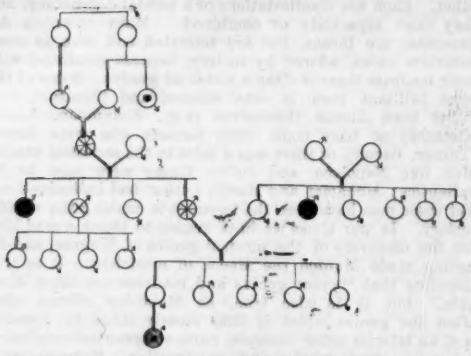
HEREDITY AND SUICIDE.

Voltaire pointed out the hereditary character of suicide, and I have met with several remarkable instances. Moreover, I have observed that recurrent insanity in a stock is frequently associated with suicide in the members so affected and even in others not affected. I will throw on the screen a slide (Fig. 4) showing homicide, suicide, and insanity. The tendency to suicide often runs in families, and some remarkable pedigrees have been published in which members of families of successive generations have taken their lives in a particular way, and sometimes even at a particular age—there is a suicidal obsession. Morel mentions an instance where seven brothers destroyed themselves though in good positions and suffering from no misfortune. Mudge, in the first number of the *Mendel Journal*, has published a remarkable pedigree of two families that were united by marriage. In one the members committed suicide by drowning and the other by shooting. Again, here is a remarkable pedigree of four generations of suicide and insanity that occurred in the London County Asylums (Fig. 5).

ZIEGLER'S THEORY OF GERMINAL DETERMINANTS.

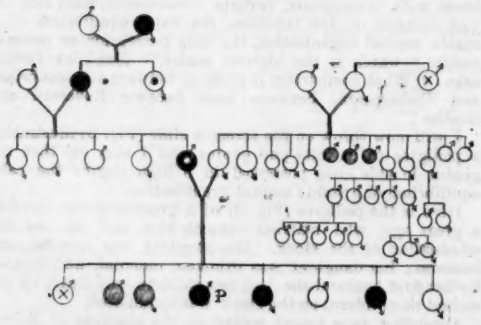
In my last lecture I showed you a diagram which may be used to explain some of the facts of heredity, and especially in connexion with insanity and nervous diseases like epilepsy. This diagram, which I will again use (Fig. 6), serves to

FIG. 2.



Pedigree showing a marriage of first-cousins. The son possessed brilliant talents *(circle in sixths)*, likewise a grandson, but of two other grandsons one was insane *(black circles)* and another a suicide *(circle with cross)*. The fourth generation are all sound. *Circle with black centre*, physically unsound. The same *shaded*, dead.

FIG. 4.



The patient (P) was a murderer (had been insane), a brother committed suicide, and two sisters were insane; all were cases of adolescent insanity. Although there was a suicide on the maternal side, the insane tendency came mainly from the father's stock. *Black circles*, insanity; *circle with deep black rim*, nervous disease; *circle with black centre*, physically unsound; *circle with cross*, suicide; *shaded circles*, died young.

FIG. 6.

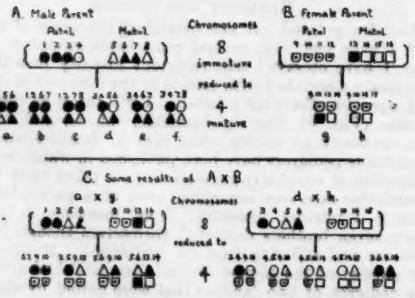
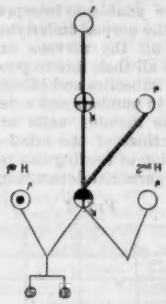


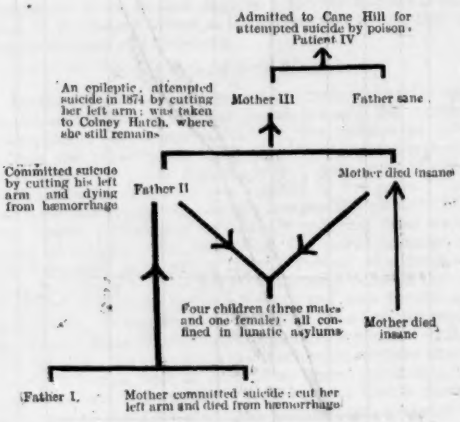
Diagram explaining transmission of a defect in different degrees by the same parents. The black figures indicate diseased germinal determinants. It will be observed that A, the male parent, inherits diseased germinal determinants from both father and mother; B, the female parent, inherits slight germinal defects from the mother. Beneath each is shown the reduction of the chromosomes (germinal determinants). In C we have illustrated some of the results of mating A and B. We can thus understand how some of the offspring are free from taint while others are markedly affected. (After E. Nettleship.)

FIG. 3.



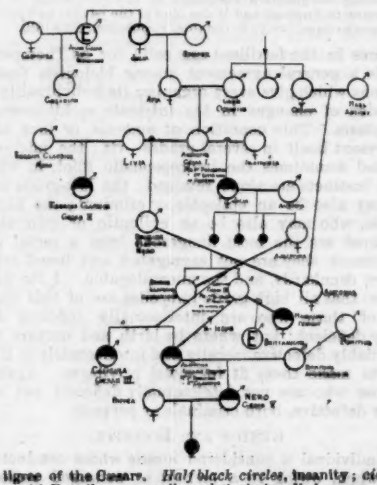
Two generations of drunken mothers, and the stock of a great man is ended. *Circle with quadrants*, alcoholism; *half black circle with quadrants*, alcoholism and insanity; *circle with black centre*, physically unsound; *small shaded circles*, miscarriage or stillbirth.

FIG. 5.


Admitted to Cane Hill for attempted suicide by poison. Patient IV
An epileptic, attempted suicide in 1874 by cutting her left arm; was taken to Colney Hatch, where she still remains
Mother III
Father sane
Committed suicide by cutting his left arm and dying from hæmorrhage
Father II
Mother died insane
Four children (three males and one female), all confined in lunatic asylums
Mother died insane
Father I.
Mother committed suicide: cut her left arm and died from hæmorrhage

Suicide and insanity in four generations.

FIG. 7.



Pedigree of the Cæsars. *Half black circles*, insanity; *circles with* E, epilepsy; *small shaded circles*, died young.

explain why in a tainted stock some of the offspring may escape while others are affected, and why if there is a taint on both sides the chance of tainted offspring occurring increases, while if there are intermarriages or consanguineous union not only will the offspring be more likely to be affected with the taint, but the depth of the degeneracy and the earlier age at which it will come on will be increased. This probably accounts in a measure for the prevalence of insanity among Jews and even Quakers, who are abstemious, and, as a rule, live in a clean and healthy manner.

CONSANGUINITY AND DEGENERACY.

Perhaps the most striking effects of consanguinity can be observed in some of the royal families and the Cæsars. I will throw on the screen a chart (Fig. 7) of the Cæsars, beginning with the great Julius, an epileptic, and ending with Nero. Again, I will show you a chart of the Spanish succession (Fig. 8) illustrating an hereditary neurosis following a family for 350 years and, as Ireland says, "sometimes passing over a generation and appearing in various forms and intensities, as epilepsy, hypochondria, melancholia, mania, and imbecility, till at length it extinguished the direct royal line of Spain. The baneful tendency in the blood was, as you see, reinforced by close intermarriages with families of the same stock, and it is worthy of notice that the house of Austria, with which the Spanish line was so often connected by marriage, had few members insane, and in the end threw off the hereditary curse. What vigour was in the first Spanish kings appeared in their illegitimate descendants, whereas those born in wedlock inherited the disease. In spite of the known ancestral taint a match with Spain was much coveted by the royal families of Europe: as an example we may recall the silly eagerness shown by James I. of England to marry his son Charles with the Infanta Maria. Whoever attends closely to history must know that there is a great deal in birth, but not birth fixed by laws and traced by heralds. A man who is well made, strong, mentally gifted, and able to do much work and stand much strain must be well born, and a race sodden with epilepsy, insanity, and scrofula, whatever its fictitious rank, is necessarily low born, and in reality is not worth preserving."

INVESTIGATION OF RELATIVES IN THE LONDON COUNTY ASYLUMS.

Two or three years ago I was interested in ascertaining whether there was any resemblance in the pattern of the brains of members of the same family and I sought the existence of relatives in the asylums. A few were known to me, but it soon became evident that there were among the 20,000 lunatics in the London County Asylums a very large number of near relatives and people who had been resident in the asylums or had died or had been discharged. I instituted a card system by which I was able to ascertain certain facts relating to types of insanity with which these relatives were affected and many other facts which conclusively point to *heredity* being the most important cause of insanity. There is nothing new in this—it is a generally accepted fact, but the importance lies in having ascertained that certain forms of insanity are especially liable to be transmitted either in the same form or more often in some other to the offspring. While in *acquired conditions* which cause madness and lead to people being taken to asylums—e.g., general paralysis of the insane, brain softening from arterial disease, general arterio-sclerosis, alcoholic psychosis with dementia, lead encephalitis, tumours, and senility, heredity plays comparatively little part.

A short time ago there were over 700 patients so nearly related as parents and offspring, brothers and sisters, in the London County Asylums. This of itself is a significant fact, for it is not probable that a similar number of near relatives could occur in 20,000 people brought together from the 6,000,000 of the population of London for some random non-inheritable cause. Moreover, it does not take into account relatives in other asylums or who have been discharged. The figures, to my mind, are in a broad way eloquent in favour of the importance of heredity as a cause of insanity.

LAW OF ANTICIPATION IN THE INSANE.

In the Huxley lecture which I delivered at Charing Cross Hospital last October I referred to the fact that in the pedigrees I had studied there was a general tendency for insanity not to proceed beyond three generations. As a general rule, there is a tendency to regression to the normal or the stock dies out. Not infrequently the stock dies out by the inborn tendency manifesting itself in the form of congenital imbecility or the insanity of adolescence. Such patients, especially paupers, are prone to die from tuberculosis: thus rotten twigs are continually dropping off the tree of life. Morel in 1859 pointed out that progressive uninterrupted transmission leads finally to special degenerative forms to imbecility and idiocy, and with the diminished capability of propagation of the latter kind the stock therefore gradually becomes extinct.

Mr. E. Nettleship observed what I had said and sent me an interesting paper[2] of his own on heredity. In this he points out that certain eye diseases and diabetes when transmitted occur at an earlier age in each successive generation; this fact had been observed by others and termed "anticipation"; thus owing to an interference with sexual selection or the disease killing off the patient before the age of procreation the tainted stock tends to die out, and therefore it is not often that diabetes or glaucoma, senile and presenile cataract, for example, are transmitted beyond three generations. Moreover, he remarks: "Anticipation or ante-dating of onset or of completion in a family disease might be taken to show the transmission of an acquired character. But it may be explained as well or better by assuming that certain defects, taints, or vices of the system, say of the blood, are not only hereditary in the true or germinal sense, but able to produce toxic agents in the embryo that have no relation to the hereditary vice, but yet may and probably do act in a similar manner as excitant of the hereditary disease."

Since then I have collected 420 pairs of parents and offspring, and the curves which I shall show on the screen illustrate the facts which this investigation shows. One broad fact illustrating this ante-dating or law of anticipation comes out, and that is that 51 per cent. of the offspring have their first attack of insanity before the age of 25; a considerable proportion of these are congenital imbeciles. This does not take into account a number of idiots and congenital imbeciles who have been sent to the asylums of the Metropolitan Asylums Board, of which I have no records. Another fact that stands out prominently and which was known since the time of Baillarger is that the mothers transmit much more frequently than the fathers to the offspring—viz., 243 : 177—and that daughters are affected more often than sons in the proportion of 253 : 167. These facts are shown in the four curves. (Fig. 9.) The base line is divided into decades, the vertical line is divided into multiples of two, and represents numbers of parents and offspring, whose ages at the time of first attack fall in the given decades. It will be observed in the first curve that there are 25 sons under 20; these cases are imbeciles and cases of adolescent insanity, as against one imbecile father; there are 20 under 30 against two fathers. Now when we get to the prime of life for first attack in fathers and sons the curves almost intersect at the same numbers, but whereas the sons drop rapidly the fathers rise rapidly. In the curve of the fathers and daughters it is not quite the same. There is not much difference in the curve of the fathers, but the daughters are much more numerous, and in four-fifths the age at the first attack is under 30. The curve of the mothers and sons shows that two-thirds of the sons have had their first attack under 30, whereas in the mothers it is after 50. The next curve (Fig. 10) shows parent and offspring in one curve without separation of sexes, and exhibits the ante-dating remarkably well. The next curve (Fig. 11) shows the comparative ages at which brothers and sisters are affected.

DATA UPON WHICH THE CURVES ARE FRAMED.

The diagrams show the relative number of cases in the combination of insane parents with insane children whose ages at the time of the first attack fall in the given age periods. Altogether 420 pairs (1 parent with 1 offspring) have been investigated.

Mother and daughter	150 pairs.
Father and daughter	103 ,,
Mother and son	93 ,,
Father and son	74 ,,
Total	420 ,,

These 420 pairs represent 774 cases and 359 families. In the case of the brothers and sisters (one brother and one sister) 152 pairs (representing 304 cases and 152 families) have been investigated.

I have investigated the age at the time of first attack in 413 instances of offspring whose mother or father has been a resident in a London County Asylum, and have found that

[2] Some Points in Relation to the Heredity of Disease, St. Thomas's Hospital Gazette, March, 1910.

212 (i.e., 51 per cent.) had their first attack at or before the age of 25.

Analysis of Cards (18/2/11).—Instances of two of a family insane.

	Pairs.	Cases.
Mother and daughter	111	222
,, ,, son	64	128
Father and daughter	72	144
,, ,, son	52	104
Brothers and sisters	163	326
Two sisters	159	318
Two brothers	105	210
Husband and wife	49	98
Other relationships, collaterals, &c. ...	138	276
Total	913	1826
108 instances of 3 of a family insane		324
17 ,, 4 ,, ,, ...		68
3 ,, 5 ,, ,, ...		15
1 ,, 6 ,, ,, ...		6
1 ,, 7 ,, ,, ...		7
Total		2246

Total, 2246 cases, made up from 1043 families.

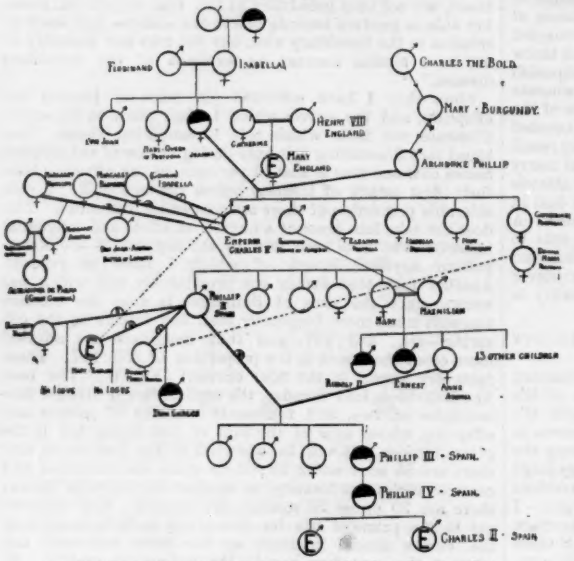
These facts show that almost invariably in the case of insane parents and offspring the offspring is affected earlier than the parent, generally much earlier, on the average approximately at half the age of the parent. In over 50 per cent. of the cases the offspring were either congenital imbeciles or suffered from adolescent insanity. This law of anticipation which we see so well exemplified is of extreme importance, and I am not aware that any collection of data on a large scale has hitherto been forthcoming to show the truth of Morel's conclusions, which were based upon a large general experience combined with a remarkable insight into the nature and causes of insanity. As Ribot says, Morel's work is not sufficiently known and studied, and I owe my knowledge of its value to Dr. Henry Maudsley.

SIMILAR INHERITANCE.

Another interesting fact in connexion with heredity and insanity is a tendency of similar inheritance in certain types. I am indebted to my friend Mr. Edgar Schuster,[3] who

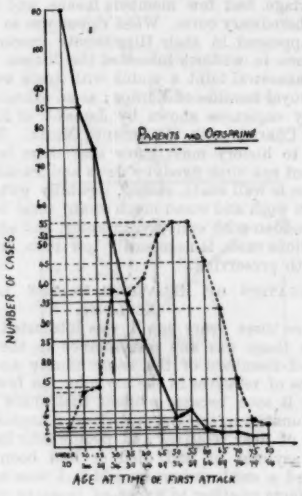
[3] The results of this investigation are described more fully in my Huxley lecture, THE LANCET, Oct. 8th, 1910, p. 1067, and the full details of the investigation are given in the Annual Report of the Asylums Committee of the London County Council, 1910.

FIG. 8.



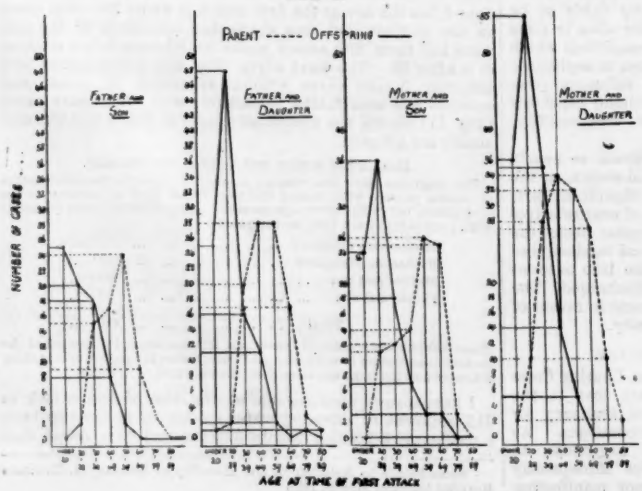
Pedigree of Spanish Succession. *Half black circles*, insanity; *circles with* E, epilepsy.

FIG. 10.



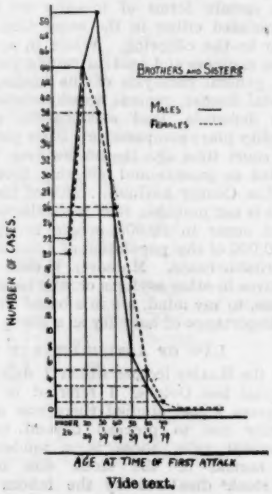
Vide text.

FIG. 9.



Vide text.

FIG. 11.



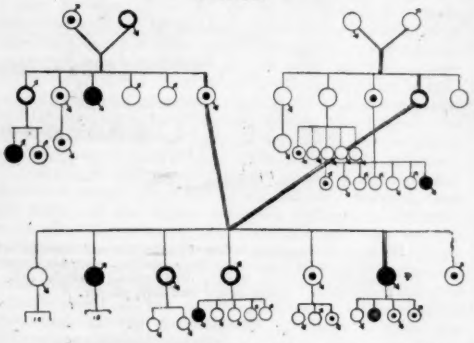
Vide text.

was kind enough to make a biometric investigation of the cards of these insane relatives for researches on this point. He found that certain types of insanity which I have always regarded as most hereditary showed a greater tendency to similar inheritance than others which I have always regarded as less hereditary or due to acquired causes. Not only was similar heredity shown in parents and offspring, but this was even more marked in brothers and sisters. The types of insanity which show similar inheritance in much greater proportions than other forms are recurrent periodic insanity, consequently persons who would be discharged as cured would tend to have offspring similarly affected. This correlation was also shown in paranoia (delusional insanity) still more markedly. Schuster noted the fact that in the case of primary dementia of adolescence there is a strong correlation between brothers and sisters or sisters and sisters and brothers and brothers, but there was no available material for parents and offspring suffering from this disease. This is not surprising when we consider the "Law of Anticipation."

THE STUDY OF INSANITY BY PEDIGREES.

Every case of insanity should be regarded as a biological problem and the study resolves itself into the acquirement of a knowledge of what an individual was born with—Nature—and what has happened after birth—Nurture. The former can only be approximately ascertained by a study of the ancestral stocks, requiring a careful inquiry and analysis of the family histories of the members in the direct line and, if possible, of collaterals. By careful attention and inquiries many important facts in respect to the transmission of a neuropathic taint can be obtained; it must always be remembered that the neuropathic tendency may be manifested in different members of the stock in different ways. Some members may suffer from some form of neurosis—e.g., chorea, epilepsy, migraine, neurasthenia, exophthalmic goitre, or diabetes. (Figs. 12 and 13.) In others it may be

FIG. 12.

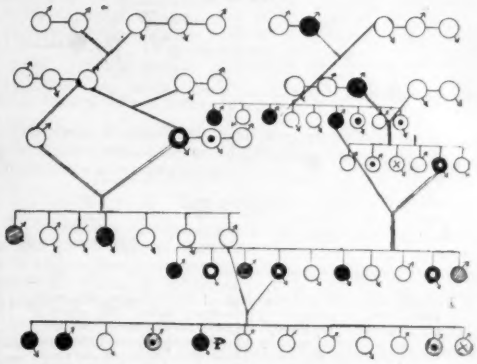


This pedigree is of a hospital patient, P, suffering with neurasthenia and mental symptoms. It will be observed that nervous disease and insanity affect a number of members, especially on the maternal side. *Full black circles*, insanity; *circles with deep black rim*, nervous disease; *circles with black centre*, physically unsound.

temperamental and manifested by eccentricity, melancholy, exaltation, feeble will-power, or lack of moral sense, manifested by evil desires or perversions. Such inherited tendencies of temperament and character may be more or less restrained by proper nurture, but given an environment in which suggestion and imitation can play their part—e.g., temptation to drink, suggestion and imitation of evil companions and surroundings, pauperism, and unemployment—and the result will sooner or later be anti-social conduct in the form of insanity, crime, or suicide.

These inborn tendencies in one generation may be transmitted to the next in a more intensive form, and the product may be congenital imbecility or feeble-mindedness. I have found this result occur from the marriage of two first-cousins who themselves were not insane, but came from a tainted stock, or in other instances, and the more numerous, there has been a union of two individuals neither of whom was epileptic or insane, but they came of two unsound stocks. According to the diagram after Ziegler (Fig. 6) we can understand why the blending of two unsound stocks should lead to a greater depth of degeneracy and an affection of a larger number of members of the stocks, but we can also see why there are chances for some members born of the union of two unsound stocks being more or less free from a hereditary taint.

FIG. 13.

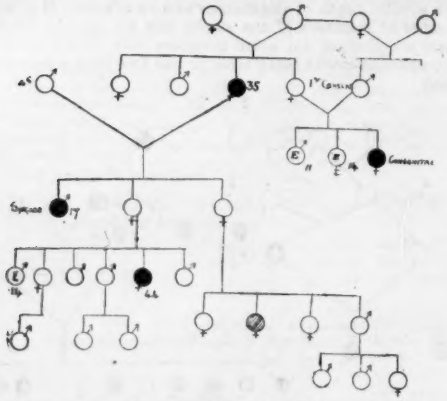


This pedigree of four generations is interesting on account of its completeness and of the large number of members of the stock on the maternal side which are affected with insanity, nervous disease, and suicide. There is not a single alcoholic on either the maternal or paternal side. The paternal stock is not free from taint, but the three cases of insanity and the suicide of the fourth generation, making up nearly half the living members, have for parents a healthy father and a mother with nervous disease. It shows how necessary it is to study the maternal and paternal pedigrees in coming to any just conclusion about hereditary transmission. *Full black circles*, insanity; *circles with deep black rim*, nervous disease; *circles with black centre*, physically unsound; *circle with cross*, suicide; *shaded*, died in early life. It was observed that the same members of the stock on the paternal side were of a melancholy temperament. The history was obtained from a very intelligent member of the family.

Even some of the most ardent followers of Weismann and the non-transmission of acquired characters admit that environment may affect the germ plasm, and thus they would account for variations; consequently it may be assumed that alteration in the blood and lymph which nourish the germ cells may have an influence on the chromosomes or germinal determinants causing variations to arise of a pathological nature.

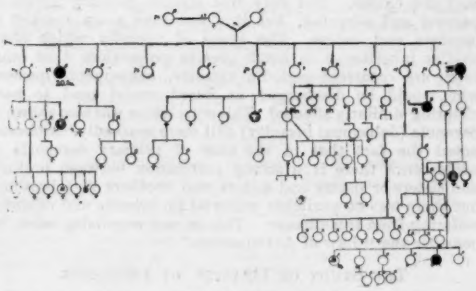
If two neuropathic stocks intermarry, or there is consanguinity in a tainted stock, the mental degeneracy is either present at birth of offspring in the form of idiocy or imbecility, often followed by epilepsy in early life, or insanity or epilepsy may occur in adolescence; and in the natural course of events this anticipation leads to the tainted stock either dying out or of elimination of its worst members, and those members who are comparatively free by breeding with a sound stock may in several generations throw off the hereditary curse. Thus Nature tends to revert to the normal. The accompanying figure illustrates the effects of consanguineous marriage of first-cousins not themselves affected but coming of a tainted stock leading to an intensification of tainted germinal determinants and all three of the offspring being affected in early life with epilepsy or imbecility; either they could not, or did not, have the opportunity of propagating, and so that tainted stock died out (Figs. 14 and 15). But, as the pedigree shows, another member, a sister who between 30 and 40 became insane, married into a sound stock, and the result was a dilution of the tainted germinal determinants; in the first generation there was a suicide; in the second, an epileptic and one climacteric insanity; several members, grandchildren, were of peculiar temperament, but in the third generation there was no trace of insanity, epilepsy, or peculiarity of temperament, thus proving the truth of Morel's opinion. The insane disposition may disappear by constantly renewing the blood by marriage with perfectly healthy families; but it is increased and developed to the most degenerate forms by further intermarriages. This was strikingly exemplified in the Cæsars and the Spanish Succession (*vide* Figs. 7 and 8). Morel also

FIG. 14.



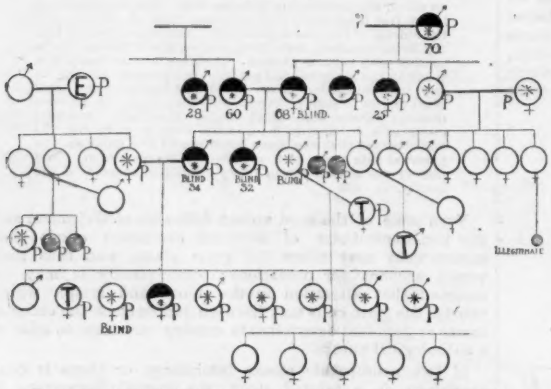
Pedigree illustrating a marriage of first-cousins, who were sane, but had presumably hereditary taint. The effect of consanguinity is shown by two of the three offspring becoming affected early in life with epilepsy, and the other with imbecility, the result being termination of the stock. The pedigree also shows the effect of marrying into a healthy stock (Fig. 15), whereby the hereditary tendency in three generations has disappeared.

FIG. 15.



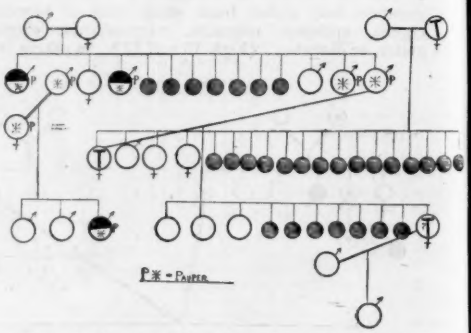
Pedigree of a large healthy stock, showing fertility and longevity, with mental and physical soundness of constitution. There is one instance of acute insanity which occurred as the result of an emotional shock at the age of 20, but this individual became a most prosperous man and lived to the age of 88. This pedigree also shows the connexion with Fig. 14.

FIG. 16.



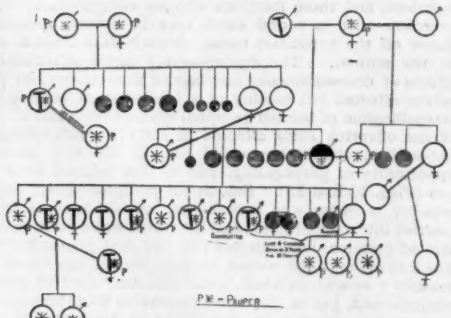
Pedigree showing transmission of insanity and blindness, and association with pauperism. *Half black circles*, insanity; *circle with* E, epilepsy; *circles with* T, tuberculosis; *small shaded circles*, died young, &c.; *circles with* P *and star*, pauper. The numbers denote the age at the time of first attack of insanity.

FIG. 17.



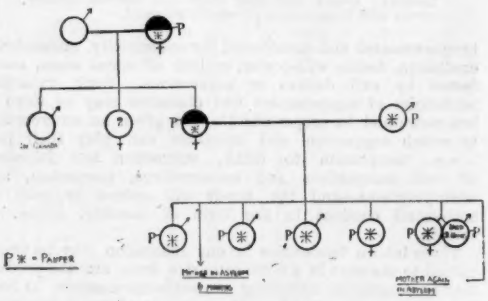
Pedigree showing association of pauperism and insanity, with marked fertility and infantile mortality. *Half black circles*, insanity; *shaded circles*, died young; *circle with* T, tuberculosis; *circles with* P *and star*, pauper.

FIG. 18.



Pedigree showing association of tuberculosis, pauperism, and insanity. Also shows infantile mortality and rapidity of procreation. *Half black circle*, insanity; *circles, with* T, tuberculosis; *small shaded circles*, died young; *smallest shaded circles*, miscarriages, &c.; *circles with* P *and star*, pauper.

FIG. 19.



Pedigree showing association of pauperism and insanity, and the birth of offspring during the lucid interval of a case of recurrent insanity. *Half black circles*, insanity; *circles with* P *and star*, pauper.

asserts that it may be increased and developed by drunken fathers, &c. In respect to the last-mentioned influence, I know of no more likely cause of degenerate offspring than that produced so often in the pauper classes by the marriage or cohabitation of a drunken father with an imbecile mother. The offspring derives from the former a weak will power and lack of moral sense, from the latter a feeble intelligence, often combined with lack of will power and moral sense.

THE INCREASE OF INSANITY.

By the law of "anticipation" and by the greater liability of the feeble-minded and insane to suffer from the effects of tuberculosis, Nature is continually striving to prevent the perpetuation of poor types. But if this fact be admitted, how does it come about that insanity is *apparently* so greatly on the increase? It will be observed that I say *apparently*, for the curve shown on Fig. 1 in my opinion somewhat exaggerates the increase for the following reasons. The standard of sanity has been raised; the treatment of the insane is now most humane and quite different from what it used to be. A large number of lunatics, idiots, and imbeciles who were formerly at large are now segregated in asylums. Still, we have to remember that Nature's mode of killing off poor types has greatly diminished in activity, and numbers who formerly would have died are now taken into asylums, treated, and discharged to propagate their species. 12 per cent. of those discharged from the London County Asylums some years ago, it was found, were readmitted within 12 months. I have known one woman who was discharged and readmitted 23 times; in the meantime she had a large family. It may be that we are now reaping the harvest we have allowed to be sown by interference with Nature's mode of elimination. Again, it is probable that as fast as Nature eliminates degenerates new tainted stocks are developed by the effects of environment. Dejerine held that neurasthenia may serve as the starting-point of all the affections of the nervous system; according to him it is the source of the great neuropathological family. If it be admitted that neurasthenia be the starting-point, and this unstable nervous condition may be produced by such factors as prolonged alcoholic abuse, sexual excesses, stress of town life, with its feverish pursuit of gain and pleasure, competitive examinations, the constantly increasing departure from simple modes of life and the extension of more refined physical and mental enjoyments, bringing with them desires and emotions previously unknown, the imposition of celibacy on women and the unphysiological conditions of sexual life, whereby the maternal instinct, from which spring all the higher altruistic feelings, is starved—then it may be assumed that neurasthenia may be the reservoir which continually supplies degeneracy in its many forms, and according to this view the cumulative effects of all these conditions in successive generations by leading to the development of the unstable neurotic self-regarding temperament of the neurasthenic forms in a stock the prelude to neurosis and insanity.

INSANITY AND PAUPERISM.

Mr. E. J. Lidbetter, relieving officer for Bethnal Green, has collected facts relating to patients who have been admitted to London County Asylums showing the correlation of insanity, pauperism, and disease. He has constructed a number of pedigrees, some of which I will now give as they are instructive (Figs. 16, 17, and 18). This work is still in progress, and I am hopeful in obtaining the coöperation of other relieving officers when it may be possible to obtain numbers sufficient for the purpose of framing statistics. Still, some of these pedigrees confirm the opinions which I had formed that recurrent types of insanity during lucid intervals may breed a stock of potential lunatics and paupers. Again they demonstrate the fact that a high degree of fertility is frequently associated with tuberculosis and a relatively high death-rate (*vide* Figs. 17 and 18). In the Huxley lecture I alluded to similar facts which had been ascertained by a comparative study of the pedigrees of 40 hospital patients and 23 pedigrees kindly taken for me by Dr. F. A. Elkins, superintendent of Leavesden Asylum for Imbeciles. Some interesting pedigrees also have been obtained showing that individuals are discharged from asylums, have children born in the workhouse, and later the individual is received into the asylum again, and these children have to be maintained by the ratepayer. Fig. 19 is an example of this, as is also the following:—

Male. First Attack at Age 15.

In asylums:—			
In 1888, Bethlem and Ayrshire.	27/1/98	to	13/8/98, Banstead.
24/12/88 to 4/5/89, Grove Hall.	22/12/99	,,	7/4/00, ,,
3/11/90 ,, 6/2/91, Banstead.	7/12/01	,,	24/3/02, ,,
21/11/91 ,, 2/4/92, Barming Heath.	5/10/03	,,	19/9/04, ,,
1/9/93 ,, 18/12/93, Hanwell.	25/1/06	,,	25/6/06, ,,
	6/11/09	,,	23/5/10, ,,
	13/2/11		,,

First child born 29/4/04; second child, 2/7/06; third child, 24/1/09; fourth and fifth children (twins), 24/1/10.

The whole of this family have been, on and off, chargeable upon indoor and outdoor relief since 1906, and all the children are now chargeable.

CONCLUSIONS.

1. Hereditary predisposition is the most important factor in the production of insanity, imbecility, and epilepsy. It is the *tendency* to nervous and mental disease, generally speaking, which is inherited. This may be termed the neuropathic taint.

2. Education, sanitation, and the rest, as Bateson has stated, are only the giving or withholding of opportunity for good or ill.

3. Alcohol is a powerful coefficient, but not of itself the main cause, in the production of insanity, except in the rather infrequent cases of alcoholic dementia.

4. Certain types of insanity may be transmitted with greater frequency than others. This has been termed similar heredity. The types are: Periodic insanity (also termed "manic-depressive"), delusional insanity, and epilepsy. The general rule, however, is for a different type to appear.

5. Mothers transmit insanity and epilepsy with much greater frequency than do fathers, and the transmission is especially to the daughters.

6. Anticipation or antedating is the rule whereby the offspring suffers at a much earlier age than the parent; more than one-half of the insane offspring of insane parents are congenital idiots or imbeciles, or have their first attack in the period of adolescence. This adolescent insanity may take an incurable form of dementia in a large number of cases; in others it is usually mania, melancholia, or periodic insanity, and not infrequently epilepsy with or without imbecility. Very rarely does the parent become insane before the offspring. This is a strong argument of hereditary transmission, possibly hereditary transmission of an acquired character.

7. Regression to the normal average may be (1) by marriage into sound stocks, or (2) by anticipation or antedating leading to congenital or adolescent mental disease terminating the perpetuation of the unsound elements of the stock.

8. High-grade imbeciles who are not at present in any way checked in procreating owing to social conditions interfering with survival of the fittest, together with chronic drunkards, neurasthenics, and neuropaths, are continually reinforcing and providing fresh tainted stocks.

9. Recurrent insanity owing to the fact that patients are not segregated for any length of time is probably the most potent cause of insane inheritance. Facts tend to support the opinion that the recurrent types of insanity during lucid intervals may breed a stock of potential lunatics and paupers.

10. Nature is always striving to go back to the normal average and only relatively few of a stock are insane. A stock with a streak of insanity when combined with genius is not bad, and the same may be applied to a nation; but we only want a streak of genius and insanity, the great body of the nation should be of good normal average, for I believe that nation will possess the greatest potential virility in the struggle for existence that can breed from the greatest number of men and women with good bodily health who possess a large measure of the three attributes of civic worth—viz., courage, honesty, and common sense, combined with parentage, pride of family, and pride of race.

An Address
ON
ABNORMAL FORMS OF BREATHING IN CASES OF ANGINA PECTORIS WITH PULSUS ALTERNANS.

Delivered before the Hunterian Society on March 22nd, 1911,

BY J. DAVENPORT WINDLE, M.D. VICT.

MR. PRESIDENT AND GENTLEMEN,—In an essay[1] which I recently submitted to your society I dealt at length with some relationships subsisting between alternation in strength of the pulse and disturbance of the normal rhythm of breathing in patients the subjects of arterial degeneration. I purpose this evening to consider, and to illustrate by records of pulse and respiration, a few of the observations embodied in that communication, which have reference to a group of symptoms embracing angina pectoris, pulsus alternans, and abnormal respiratory rhythm. All the tracings I shall show you were obtained from patients presenting these symptoms at some time or other whilst under observation.

While the rhythm of the pulse has always been a subject of careful investigation in heart failure, and in recent years has led to an important classification of cases, the rhythm of the respiratory movements has received but little attention. In the course of routine observations I incidentally noticed that disturbance of normal respiratory rhythm was not uncommonly present in cases of cardiac dyspnœa, and further inquiry pointed to this being more common in cases of heart failure from arterial disease than in those resulting from rheumatic lesions. Subsequent observations brought other curious facts to light—namely, that in patients in whom an abnormal rhythm of breathing was most pronounced pulsus alternans was frequently present, and, further, most of the patients were the subjects of angina pectoris. The researches of Mackenzie[2] have established the intimate relationship which exists between alternating pulse and angina pectoris, but the association of disturbance in respiratory rhythm in such cases has not before been noticed as of common occurrence. Before demonstrating these relationships I will first outline the characters of alternating pulse, since it is often overlooked, and its clinical significance is not generally recognised.

PULSUS ALTERNANS.

Much confusion prevails in the use of the term "pulsus alternans." Clinically the name is often given to any pulse in which the beats alternate in force; this is erroneous and leads to serious errors in diagnosis and prognosis.

True pulsus alternans has definite specific characters (Fig. 1, A to E). A strong beat is regularly followed by a weaker beat, while the intervals between the beats are equal in duration, although at times there may be a small difference in the length of the pause from pulse to pulse, but if such is present it is always slight, and the longer pause invariably follows the stronger beat, as is shown in Fig. 1, A.

Such, briefly, are the characteristic features of true alternating pulse, which serve to distinguish it from some forms of pulsation that simulate it closely, as will be shown presently.

The regular rhythm of continuous pulsus alternans may persist for months, but in most cases the pulse becomes irregular in rhythm sooner or later from the occurrence of premature beats or extra-systoles. When these occur frequently the mixture of extra-systoles and pulsus alternans is at times difficult to discriminate, but in a radial tracing the weaker premature beats are readily differentiated by measuring the distance from pulse to pulse—the pause following an extra-systole is longer than that which follows the preceding or succeeding beats. Examples of pulsus alternans with extra-systolic beats are shown in Fig. 2, A to D, the premature beats being marked X.

[1] Windle: Clinical Observations on Heart Failure from Arterial Disease associated with Pulsus Alternans and Abnormal Respiratory Rhythm (Hunterian prize essay, 1910).
[2] Mackenzie: Diseases of the Heart, first edition, London, 1908.

The clinical recognition of alternating pulse in patients with arterial disease is important, since its presence or absence in a given case considerably modifies the prognosis. At times the condition can be made out by the finger if the pulse continuously alternates, but in some patients alternation only occurs when extra strain is thrown on the heart and lasts but a short time; in such cases it is difficult to determine whether true alternation is present or not, except from a radial tracing. For these reasons when alternating pulse is suspected the patient should always undergo sufficient exertion to induce breathlessness, and a radial tracing taken immediately afterwards, when pronounced alternation may be evident, while at rest the pulses are equal in strength.

Should continuous alternation be present, exertion always increases its degree, and so helps in its recognition when means for a tracing are not available, but it is surprising how difficult it is to detect the disparity in force of the beats by the finger, even when a pulse tracing shows continuous and considerable alternation. In this connexion much depends upon the degree of pressure exerted on the artery. In most patients the arterial tension is abnormally high, and the difference in force of the beats is more readily detected if the vessel is firmly compressed. Fig. 1 A is the record of a pulse with a tension of 185 mm. Hg; the difference in force was much more decided to the finger on firm compression of the artery. If the pulse is of low tension, however, the pressure of the fingers on the artery should be as light as possible, otherwise the difference in strength of the pulses may be effaced. In the case from which the tracing Fig. 1 D was taken the weaker beat was barely perceptible, and firm pressure abolished the weaker beats, and with uneven pressure the pulse felt irregular.

Occasionally, as in Fig. 1 E, the weaker pulse fails to reach the wrist, and for a few beats the pulse-rate falls to half frequency, causing a marked irregularity, but on listening to the heart sounds we find that contractions of the ventricle occur regularly.

PULSUS BIGEMINUS.

A form of pulse which bears a close likeness to pulsus alternans is that in which an extra-systole succeeds each normal beat (Fig. 3, A to D). It is important in practice to distinguish this form of pulse from pulsus alternans, since their clinical significance is entirely different. In the figures a weak beat regularly follows a stronger beat, and in consequence the pulses alternate in force; but we find that the rhythm of the beats is irregular, and further that the feeble beat has the characters of an extra-systole—that is to say, it occurs prematurely and is followed by a longer pause than that succeeding the strong beat; the opposite to what happens in true pulsus alternans. (Compare Fig. 1.)

In the case from which the records A and B, Fig. 3, were taken the true nature of the irregularity could not be certainly determined without a tracing; but as a rule, as in the examples C and D, Fig. 3, the condition is readily recognised by the finger, and in such cases on listening to the heart we hear the coupled rhythm of the sounds so characteristic of extra-systole — $\frac{\text{Lub}}{1} - \frac{\text{duptutup}}{2\ 1\ 2}$ — an abnormally long pause separating each group of four sounds. Sometimes when the premature beat occurs a little earlier, and is in consequence weaker, there are only three sounds heard with the two heart beats— $\frac{\text{Lub}}{1} - \frac{\text{duptut}}{2\ 1}$, the extra-systolic contraction being too feeble to open the semilunar valves. I dwell on these elementary facts to emphasise the prognostic importance of the distinction. Pulsus bigeminus, or, as it is sometimes called, "pseudo-alternating pulse," resulting from extra-systole has no significance as a symptom; prognosis in any case in which it is present depends entirely upon the associated clinical circumstances. So far as is known it means no more than increased excitability of the heart, and although a pulse of this kind is usually associated with cardio-sclerosis it is in no sense an index of the degree of degeneration of the heart muscle present and does not furnish any indication as to the expectation of life.

The significance of true pulsus alternans is quite otherwise. Mackenzie was the first to direct attention to the prognostic importance of this seeming trivial sign, which is evidence in itself of a high degree of degeneration of the heart muscle;

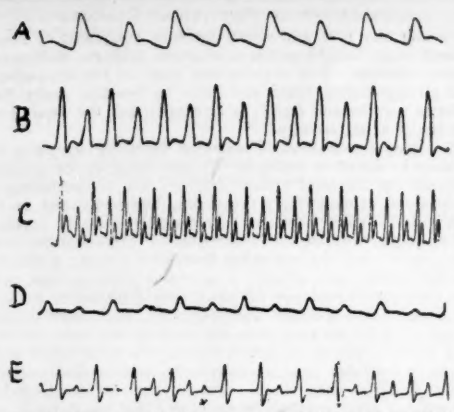


FIG. 1.—Examples of pulsus alternans. In the tracing marked A the feeble beat is followed by a shorter pause than that succeeding the stronger beat. In B, C, and D the pulse periods are equal. In the last tracing a premature beat occurs at X, in the succeeding intermissions the weaker alternating beat fails to reach the wrist.

FIG. 2.—Radial pulse tracings to show a mixture of alternating beats and extra-systoles. The extra-systoles are marked X and are followed by a longer pause than the alternating beats.

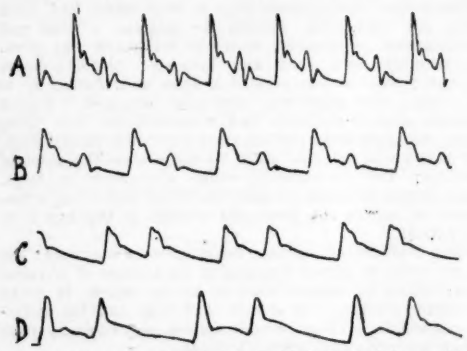


FIG. 3.—To show pulsus bigeminus; the feeble beat is an extra-systole as shown by the longer pause. Compare Fig. 1.

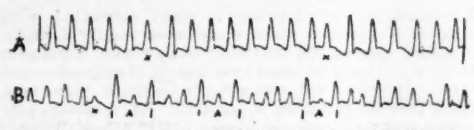


FIG. 4.—A is the pulse tracing taken at rest; ventricular extra-systoles occur at X. No alternation is present. B is the radial tracing taken immediately after slight exercise; the irregularity is due to extra-systoles and alternation in force, shown in the pulse groups marked A.

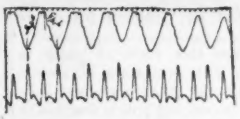


FIG. 5.—Tracing of pulse and respiration from a case of angina pectoris shortly after the onset of dyspnœa induced by exertion. Respirations 58 per minute. Radial pulse tracing shows marked alternation which was not present in any previous records from this patient.

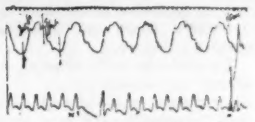


FIG. 6.—From a case of cardio-sclerosis, taken 24 hours after the onset of dyspnœa. Respirations 38 per minute. The height of the pulse wave varies with respiratory movements. Irregularity due to extra-systole, at X' is present. After X there is decided pulsus alternans. In previous records from this patient the pulse was always regular in force and rhythm.

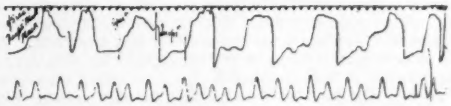


FIG. 7.—Tracing of the respiratory movements of the sterno-mastoid and radial pulse taken during an attack of cardiac asthma. The pulse is completely irregular and in places resembles true alternation.

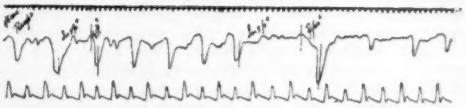


FIG. 8.—From a case of cardio-sclerosis with pulsus alternans and continuous dyspnœa of inspiratory type. On the right of the tracing there is a coincident slowing of the pulse with respiration. The long respirations occurred only occasionally. The rhythm shown was constantly present for some weeks.

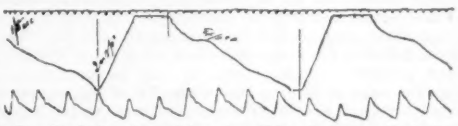


FIG. 8A.—Expiratory form of dyspnœa. Taken during an attack of cardiac asthma from a case of cardio-sclerosis. Respirations 12 per minute. Radial tracing shows respiratory variations in height and duration.

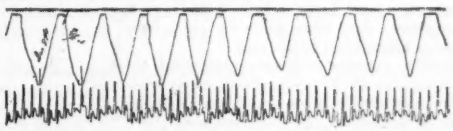


FIG. 9.—Taken from the same case and at the same time as Fig. 8A, immediately after the inhalation of amyl nitrite III v. Respirations 19 per minute. Each phase is normal.

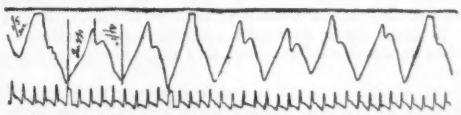


FIG. 10.—Part of the same tracing as Fig. 9 taken about 15 minutes later. Expiration is again prolonged, and respiratory alternation in height and duration of pulse present with rise in blood pressure.

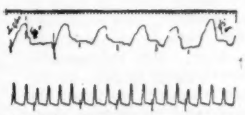


FIG. 11.—From a case of angina pectoris; breathing regular; shows respiratory alternation in the radial pulse; the weaker beat coincides with expiration.

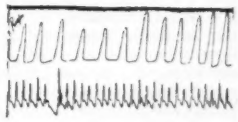


FIG. 12.—From the same case as Fig. 11 some weeks later; shows true pulsus alternans. Breathing was of a grouped character when this tracing was taken.

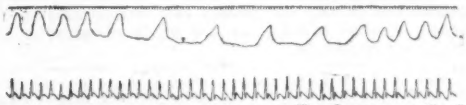


FIG. 13.—Taken from the same case as Fig. 5 some months later. Respirations of a grouped character are shown. Alternation in the pulse of respiratory type. Here and there true alternation is present.

but it indicates more than that—it is the expression of an exhausted heart and signifies that its "reserve force" is greatly impaired.

In patients with arterial disease this form of pulse is always associated sooner or later with symptoms of severe heart failure, and although patients may go on comparatively well for months with care the ultimate outlook is decidedly unfavourable. The prognosis of these cases, however, has not been systematically followed up, and there is no literature bearing on the question except in the writings of Mackenzie. In my own series of 17 cases no patient lived longer than 17 months after the presence of pulsus alternans was first observed.

I have already alluded to the fact that in all patients with arterio-sclerosis presenting pulsus alternans which I have observed, anginal symptoms were present at some time or other. From this statement it must not be inferred that all patients with angina pectoris show pulsus alternans. As these records show,[3] the pulse in anginal patients, both during paroxysms and in the intervals, is of a most varied character, but we can say with confidence that in any patient with arterial disease and alternating pulse anginal attacks have occurred, or will occur sooner or later, unless dropsy sets in, when if previously present they cease as a rule.

Apart from paroxysms of angina pectoris the dominant symptom in most patients with pulsus alternans is seemingly causeless breathlessness. We know that the severity and persistence of breathlessness in heart disease are, generally speaking, more or less a measure of the amount of dilatation present, and that it is not usually continuous unless the heart is considerably dilated and dropsy, together with physical signs of œdema of the lungs, is present. In these respects the breathlessness of patients with pulsus alternans differs; on slight exertion, for example, dyspnœa is often as severe as that in advanced rheumatic heart failure, yet the heart may be but little enlarged and free from valvular defects; the lungs clear, and no evidence of kidney disease present. Again, dyspnœa may be continuously present for days or weeks, independently of pulmonary or kidney lesions and altogether disproportionate to the degree of heart trouble as evidenced by physical signs. Although eventually in most cases of this kind the blood pressure falls, the heart dilates, and dropsy sets in, yet at times such patients die from heart failure with but slight dilatation of its cavities, and with little or no dropsy, and the blood pressure keeps high to the end.

Another notable respiratory symptom in these patients is the frequency of paroxysmal attacks of dyspnœa, which also occur independently of pulmonary disease or demonstrable lesion of the heart. In many respects the symptoms in some of these forms of dyspnœa bear a close likeness to angina pectoris, and a further association between the two conditions is occasionally evidenced by the fact that in some patients attacks of angina and attacks of cardiac asthma alternate; and in other cases an attack commencing as angina terminates in cardiac asthma, and also the contrary sequence occurs.

During attacks of dyspnœa, whether arising spontaneously or induced by exertion, peculiar disturbances of the rhythm of breathing are not infrequent, and an abnormal form of respiration may be present, with quiet breathing when the patient is at rest. At times the phases of individual respiration are of abnormal duration; at others there is more or less periodic variation in depth of breathing and sometimes the breathing alternates in rhythm, periods of quick and slow respiration succeeding each other. Not infrequently short irregular pauses punctuate the changes in rate, during which breathing almost or entirely ceases; at times the pauses are prolonged, recur regularly, and respiration absolutely ceases, and in some patients typical Cheyne-Stokes symptoms are present.[4] These varieties of abnormal breathing are usually associated with changes in force and rhythm of the pulse. Generally speaking, during periods of dyspnœa alternation in force of the pulses if primarily present increases, but it may be present *only* during attacks of dyspnœa, whether ensuing as the result of exertion or occurring spontaneously.

[3] A number of records were shown, obtained from patients with angina pectoris, illustrating the condition of the pulse during paroxysms and in the intervals.

[4] Fifty lantern slides were shown illustrating these various conditions. Space only permits the reproduction of small portions of a few of the figures.

1. TRANSIENT AND CONTINUOUS DYSPNŒA.

Usually the first and most common complaint of these patients is of breathlessness on exertion, hitherto undergone without distress. Not uncommonly when at rest the patient is to all appearance sound and well: he breathes easily, the pulse is regular and equal in strength, and the heart but slightly, if at all, enlarged.

The degree and kind of exertion inducing dyspnœa is variable in different patients. It may be that the patient can walk on the level without distress, but on ascending a gentle slope, or mounting a few stairs, dyspnœa comes on at once and the pulse becomes extremely irregular in rhythm and strength, due to the occurrence of extra-systoles and alternation. Fig. 4 A was taken from such a case; a robust, healthy-looking man, without a symptom when at rest, and with no physical evidence of circulatory disturbance except occasional extra-systoles, hard arteries, and high blood pressure. After walking from one room to the next on the same level, dyspnœa becomes urgent, the pulse rapid and extremely irregular from extra-systoles, and markedly alternating in force (Fig. 4 B). The rhythm of breathing in this patient after exertion is peculiar; the breathing is at first quick and regular, and markedly dyspnœic; later it assumes a grouped character, the respirations being shallow and quick, and deep and slow, in alternate periods before the dyspnœa finally quiets down—which it usually does within a few minutes—when the rhythm and force of the pulses again become regular. In some cases abnormal rhythm of breathing of this character is present when patients are at rest, disappearing on exertion. As a rule, dyspnœa induced by exertion quickly passes off with rest, but at times persisting dyspnœa of extreme degree may ensue after extra effort. In some patients breathlessness may come on without apparent cause, and be continuously present for days together and altogether disproportionate to the degree of heart trouble as evidenced by physical signs, and independently of pulmonary or kidney lesion. With the onset and during the continuance of dyspnœa alternation in the pulse may be present for the first time. The following are illustrative cases:—

Fig. 5 was obtained from a patient aged 69 years, under my care for angina pectoris. After an unusually long walk severe dyspnœa ensued; the record was obtained some hours after its onset. The respirations were 58 per minute, and the pulse markedly alternating in force. I have a large number of tracings previously taken from this patient, none of which show any evidence of alternation. The quick dyspnœic breathing lasted for three days, during which time the pulse continuously alternated. This patient has since developed marked periodic breathing.

The patient from whom Fig. 6 was taken had been under my care some months for anginal attacks and breathlessness on exertion, otherwise the health was good. The arteries were hard and tortuous; blood pressure 195 mm.; pulse always regular in force and rhythm up to this time; the heart was somewhat enlarged. Urgent dyspnœa ensued suddenly and continued for four days, when pulmonary engorgement ensued and the patient died. The record was obtained about 24 hours after the onset of dyspnœa; the pulse-tracing shows alternation in force, which is very pronounced after the occurrence of an extra-systole—a feature not previously evident in tracings from this patient.

These cases are of practical importance in diagnosis; the sudden onset of urgent dyspnœa in the absence of physical signs pointing to organic heart or kidney lesions, or acute pulmonary affections, is at first confusing, and the underlying condition of heart muscle failure may be easily overlooked, unless a radial tracing is taken.

2. PAROXYSMAL DYSPNŒA.

Breathlessness on exertion is often associated with paroxysms of dyspnœa which occur more usually at night. The patient goes to bed breathing easily; after a peaceful sleep he is suddenly wakened by a feeling of suffocation and "has to jump up in bed and struggle for breath," and for a variable time the breathing is laboured. These attacks may simulate spasmodic asthma closely, but if pulsus alternans is present it affords a sure indication of the cause of the symptom. In other patients the attacks occur independently of sleep and position, and in some cases they recur with marked periodicity and in many respects the symptoms

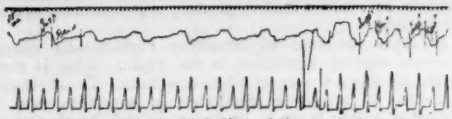


FIG. 14.—To show change in rhythm of the respiratory phases with change of rate. With the slow shallow breathing expiration is greatly prolonged; with quicker breathing inspiration is slightly longer than expiration.

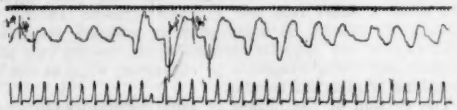


FIG. 15.—From same case as Fig. 14. Taken during an attack of dyspnœa as described in text. Shows deep slow sighing respiration interrupting a continuous quick dyspnœa.

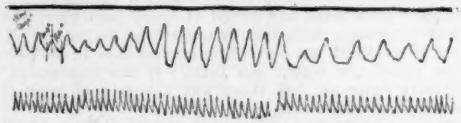


FIG. 16.—Obtained from a case of angina pectoris shortly after a paroxysm. Shows grouped respiration. Alternation present in radial pulse.

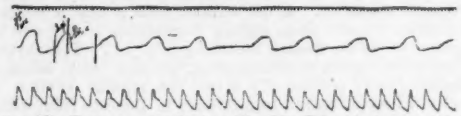


FIG. 17.—From same patient as Fig. 16. Taken during an attack of cardiac asthma. The expiratory pulse is very greatly prolonged.

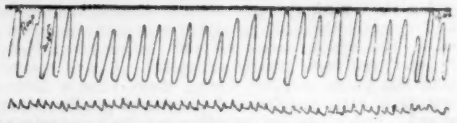


FIG. 18.—From the same case as Fig. 13. Taken during an attack of dyspnœa. The respirations are 60 per minute. Alternation in radial pulse is continuous and pronounced.

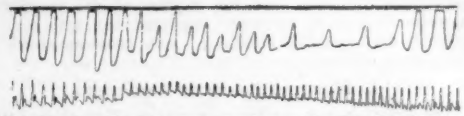


FIG. 19.—A part of the same tracing as Fig. 18. Breathing of a periodic character. Rhythmically grouped variations in height and rate of radial pulse. Showing an increase in height coinciding with dyspnœa.

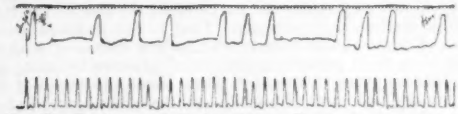


FIG. 20.—To show periodic breathing. Short pauses precede and follow each group of three respirations

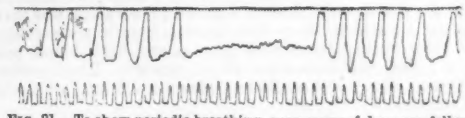


FIG. 21.—To show periodic breathing, paroxysms of dyspnœa followed by short pauses. There is decided alternation of the pulse here and there.

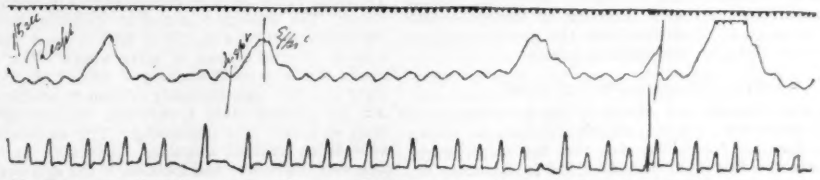


FIG. 22.—From a case of continuous pulsus alternans. Quiet regular breathing was interrupted by pauses of varying length.

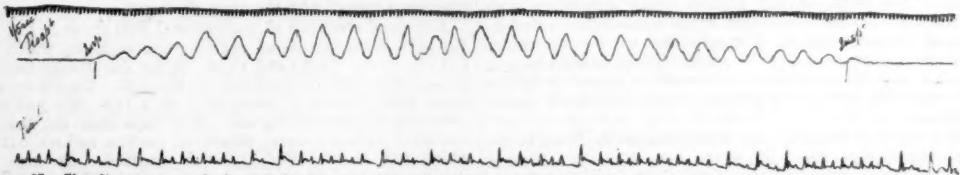


FIG. 23.—Simultaneous record of respiratory movements and radial pulse from a case of Cheyne-Stokes breathing. The upper curve shows the beginning, acme, and decline of the breathing cycle, which is 43 seconds' duration. The number of respirations is 29; rate per minute is approximately 44. The radial pulse is markedly alternating in character and irregular in rhythm from extra-systoles.

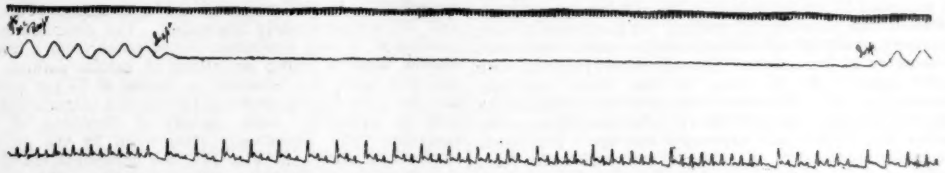


FIG. 24.—From the same case as Fig. 23. Shows a period of complete respiratory arrest of 40 seconds' duration, with the termination and commencement of breathing cycles. With the onset of apnœa alternation in the pulse gives place to a run of grouped extra-systoles. Comparatively few of the succeeding pulses alternate in force. Alternation is again present at the beginning of the breathing cycle.

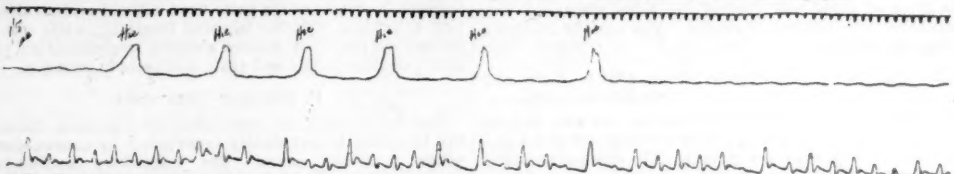


FIG. 25.—From the same case as Fig. 24. Taken on another occasion. The upper curve is a record of movements of hiccough occurring during apnœa.

present a close likeness to angina pectoris without the pain. During the attack the expression is anxious, the face pale, and frequently the body is bathed with cold clammy sweat, and as the attack passes off the patient often "shakes all over" and feels greatly exhausted. I have commonly found the pulse irregular during these attacks from the presence of extra-systoles, and the degree of alternation increased. In a patient recently observed during an attack the rhythm of the pulse was completely irregular (Fig. 7), suggesting auricular fibrillation. It is more particularly in paroxysmal dyspnœa that the rhythm of the respiratory movements is of an abnormal character, but such may be present during quiet breathing, and unaccompanied by respiratory distress.

A. INVERTED FORMS OF BREATHING.

The disturbance in rhythm may consist of an altered time relationship between the inspiratory and expiratory phases of the individual respiratory movements, which is normally as 3 : 4; either period may be abnormally shortened or prolonged, and so give rise to an inverted rhythm of the individual respiratory movements. Thus in Fig. 8, taken from a case of severe heart failure with pulsus alternans, with respirations at 37 per minute and blood pressure 150 mm., the inspiratory phase (6/5 sec.) is three times the length of the expiratory movement (2/5 sec.). In the other figures I show you of this kind of breathing, taken during attacks of cardiac asthma, the rate of respiration is not above normal. In Fig. 8 A the opposite rhythm is shown; the tracing was taken during an attack of cardiac asthma from a patient, aged 52 years, with degenerated arteries and high blood pressure. The respirations are 12 per minute. Blood pressure 185 mm. Hg. The inspiratory phase = 9/5 sec., while that of expiration = 17/5 sec.

I have noticed that there is greater respiratory distress with these inverted forms of breathing than is the case where the rhythm of the movements is normal. Moreover, attacks of paroxysmal dyspnœa with inversion of rhythm appear to hasten the onset of dilatation from the greater strain on the heart which this kind of breathing entails.

"Respiratory Alternation" of Pulse.

Some notable features are present in the pulse tracing of Fig. 8A; it differs from the true alternating character shown in previous figures. It will be seen that the radial waves vary in force and the pulse periods differ in duration, but that these variations coincide with the respiratory movements, the strongest and slowest beats coinciding with expiration. In other cases the opposite respiratory relationship of the pulse occurs. I suggest the name "respiratory alternation" for this form of pulse. These peculiarities in rhythm and force are not uncommon in cases of cardio-sclerosis with high blood pressure during attacks of severe dyspnœa.

The effect of lowering the blood pressure is shown in the next figures (Figs. 9 and 10), which were taken at the same time as Fig. 7, immediately and 15 minutes after inhalation of 5 minims amyl nitrite. The great fall of blood pressure is evident in the radial pulse, which is now regular in rhythm and increased to 108 per minute. The respiratory variations in force of the pulse are still evident, but the phases of each respiratory movement are normal, and the rate of respiration increased to 19 per minute. The subjective symptoms were greatly relieved by the drug, but the effect was only transient (Fig. 10). Fifteen minutes later the blood pressure began to rise again, the pulse showed respiratory irregularity in force and rhythm and expiration was again prolonged. Respiratory alternation of pulse is met with apart from attacks of dyspnœa in cases of cardio-sclerosis with high blood pressure; it has much the same prognostic significance as true pulsus alternans. In one of my patients in whom this form of pulse was present for some months a true alternating pulse ultimately ensued. The records are shown in Figs. 11 and 12.

B. RHYTHMICAL VARIATIONS IN RATE, AND IN RATE AND DEPTH OF BREATHING—GROUPED RESPIRATION.

Other forms of irregularity in breathing met with in these patients are those in which periodic variations in the rate and depth of respiration are present. The change from deep to shallow breathing may take place suddenly, or there may be a gradual waxing and waning in depth, until breathing becomes so shallow that respiratory movements are scarcely perceptible.

At times the rate of breathing rhythmically changes without marked alteration in its depth. This is shown in Fig. 13 from a case of angina pectoris. The rhythmical variation in breathing illustrated is constant when the patient is quiet; there is no dyspnœa, and the character of the breathing would pass unnoticed unless the respirations were carefully watched. On the least exertion breathlessness is pronounced, and the rhythm becomes quite regular, but after a short rest the grouped breaths recur. As already mentioned, in some patients grouped respiration occurs under the opposite circumstances, ensuing only after exertion and being dyspnœic in character, while at rest the breathing is quiet and regular.

The rhythm of the phases of each respiratory movement may synchronously change with that of rate. Thus in Fig. 13 in the first part of the tracing the breathing is slow and shallow with greatly prolonged expiration. This suddenly gives place to a period of quick breathing, during which inspiration lasts slightly longer that expiration. This form of breathing was present for several days in the patient from whom the record was taken; it was unattended by obtrusive dyspnœa, but there was always complaint of a feeling of breathlessness.

More commonly with rhythmical changes in rate there is coincident increase and decrease in depth of the respiration, the deep breathing being as a rule of a marked dyspnœic character. A not unusual form is that in which a succession of slow, deep, sighing respirations is followed by a period of quick, shallow breathing (Fig. 14). This rhythm is not infrequent in cardiac asthma, but slow, deep, laboured breathing may periodically break the regular rhythm of continued rapid shallow respiration; in the case from which the figure was obtained the respiration was generally shallow and quick, but on and off for some months attacks of dyspnœa came on and ceased suddenly without apparent cause. The attacks occurred at irregular intervals, sometimes two or three a day for a week or more; at others only after an interval of two or three weeks. The duration was from a few minutes to one or two hours; they occurred both night and day, independently of sleep or position of the body, and the patient could always tell by subjective symptoms when an attack was impending. The associated symptoms were of an anginal character—oppression at the chest and pain over the heart—and soreness of the skin over the middle of the chest was frequently noticed after an attack. The symptoms ceased with the onset of dropsy.

A grouped character of respiration is well shown in Fig. 16. The patient has attacks of angina pectoris during which the left fingers are flexed and rigid. After the attacks there is usually some loss of sensation in the arm. The record was taken shortly after a paroxysm: as a rule this patient's breathing is quiet and regular. Two days after the tracing was taken he had a severe attack of cardiac asthma during which the record (Fig. 17) was obtained. An inverted rhythm was present, the expiratory period being twice the duration of the inspiratory phase. The variation in rhythm of breathing under the different clinical circumstances is remarkable. In this connexion the next figures (Figs. 18 and 19) are particularly interesting. The two figures are portions of a long continuous record taken from a case of angina pectoris during an attack of cardiac asthma. In the first figure the breathing is regular at 60 per minute, and the pulse tracing shows continuous and extreme alternation in strength. Long periods of breathing of this character were periodically interrupted by the grouped respirations shown in Fig. 18; the coincident change in the character of the pulse with the rhythm of respiration is remarkable. Rhythmically grouped variations in height and rate of the pulse occur, a marked slowing in rate and increase in height of the pulse wave without evident alternation coinciding with the laboured breathing, while with the succeeding period of shallow abortive respirations the pulse nearly doubles in rate and again alternates in strength.

C. PERIODIC BREATHING.

Not infrequently in respiration of a grouped character the breathing is periodically interrupted by pauses, during which breathing ceases. The respiratory periods and pauses are usually short, of unequal duration, and recur irregularly; but at times a pause rhythmically precedes

and follows two, three, or more respirations. The breathing may be laboured, as in the instance shown in Fig. 20, but the pauses may occur during quiet breathing with an entire absence of respiratory distress; this was so in the patient from whom Fig. 20 was obtained; periodic breathing was present for some weeks before death.

Mild Forms of Cheyne-Stokes Breathing.[5]

In many of the preceding examples which I have shown you of grouped and periodic respiration the rhythm of breathing bears a close likeness to that of Cheyne-Stokes respiration, and the relationship is further suggested by the fact that in some patients with grouped and periodic breathing the disturbance in rhythm is associated with an abnormal tendency to sleep. Thus the patient with persistent grouped respirations illustrated by Fig. 12 always goes to sleep when sitting quietly, and although she is unaware of the disturbance in the breathing she is very troubled by the difficulty in keeping awake.

The following case is an example of mild Cheyne-Stokes breathing in a patient, aged 68, who came under observation for breathlessness and anginal attacks. Marked and continuous alternation of pulse was present with frequent extrasystoles. Periodic breathing was observed in this patient over some months at different times until dropsy supervened. It was present for days together and ensued without apparent cause, or alteration in the general condition, except that he was more or less continuously drowsy. During sleep the rhythm was of true Cheyne-Stokes character, but when awake the pauses were short and irregular and generally replaced by very shallow respiration.

In another similar case the rhythm of the breathing was of a more decided Cheyne-Stokes type. The patient was first seen for anginal attacks and breathlessness on exertion. The blood pressure was 150-155 mm., and the heart slightly enlarged; the pulse regular when at rest, but continuously alternating. Some weeks later mild Cheyne-Stokes breathing occurred, which persisted for ten days. During this time the patient was continuously drowsy; as the nurse expressed it, "she could not keep awake day or night," but there was no loss of consciousness. Under treatment the symptoms passed off, and for a time the general condition was considerably better. Later, attacks of cardiac asthma became the dominant symptom, and eventually extreme dropsy set in; breathing of a grouped character appeared some weeks before death and continued to the end.

The Cheyne-Stokes Syndrome.

In two of my cases pronounced Cheyne-Stokes breathing with typical associated symptoms occurred; both patients were the subjects of angina pectoris, and in both alternating pulse was present. The association of the Cheyne-Stokes symptoms and alternating pulse has been observed in only two previous cases, which are recorded by Sansom[6] and Mackenzie.[7]

In the case of the patient from whom Figs. 23 and 24 were obtained the Cheyne-Stokes breathing came on immediately after a severe paroxysm of angina pectoris. Up to the time of this attack the patient was in his usual health; shortly afterwards his breathing ceased and he was thought to be dying. When I saw him he was in the midst of urgent dyspnœa, and while observing him he stopped breathing and lay perfectly still, looking as one dead. He continued in this state for about 30 seconds, when breathing recommenced, he became restless, and consciousness returned. The repetition of these events made the nature of the case clear. Fig. 23 shows the beginning and end of a breathing cycle of 43 seconds' duration. The radial pulse is markedly alternating and irregular in rhythm from extra-systoles. Fig. 24 shows a period of apnœa of 40 seconds' duration, and the beginning and ending of breathing cycles; during this time consciousness was lost. Both these records were taken within two hours of the onset of the attack. The Cheyne-Stokes breathing continued uninterruptedly for five days, during which time dyspnœa was marked at the acme of the breathing cycles. For the four subsequent days of the patient's life the Cheyne-Stokes symptoms were absent and the breathing was continuously quick and regular; there was no respiratory distress; alternation in the strength of the pulse persisted throughout. At times during the course of the case attacks of hiccough occurred (a record of the movements is shown in Fig. 25); as a rule, hiccough began as breathing ceased; it did not occur during the breathing cycles or in the midst of apnœa. This association is curious and interesting, as showing that the respiratory centre is capable of responding to an abnormal stimulus.

I have recently had under observation another case of Cheyne-Stokes breathing, in which for about 12 hours periods of dyspnœa and hiccough gave place to each other. The symptoms occurred subsequently to an attack of hemiplegia in a patient with arterial disease and lasted for two days. In the pulse tracing decided alternation was present here and there, but there was none present before the attack came on, and the pulse has remained quite regular since.

An analysis of the rhythm of respiration in Cheyne-Stokes breathing shows that it is essentially a compound of the abnormal forms of breathing already described, the respirations being of a grouped character, with variations in depth and rate, often with inversion of the phases and of a marked periodic character. I have already illustrated by examples that these different rhythms of breathing may occur in the same patient at various times under different clinical circumstances—at one time inverted breathing, at another grouped or periodic breathing may be present, and, moreover, that during cardiac dyspnœa one of these forms of abnormal breathing may give place to another during the same attack.

The facts of the following case suggest a close causal relationship between these elementary disturbances in rhythm and the complex rhythm of Cheyne-Stokes breathing.

The patient, who suffered from anginal attacks, was taken suddenly in the night with severe dyspnœa. The respirations were of a grouped character and alternation in the pulse was present. This patient had been under my care for two years, and up to this time no irregularity in rhythm or force of the pulse has been noticed. Breathing of much the same character continued for about 24 hours, when a different rhythm ensued—paroxysms of dyspnœa being regularly followed by short pauses, and alternation in force of the pulse was more decided. On the morning of the third day the respiration was of a marked Cheyne-Stokes type, periods of dyspnœa being regularly followed by pauses of from 20 to 30 seconds' duration, the rhythm of the pulse was peculiar, groups of quick and slow beats succeeding each other irregularly. Later in the same day the periods of apnœa averaged 40 seconds' duration.

In the course of this case there was not only this transition in rhythm of breathing, from simple expiratory dyspnœa to a marked form of Cheyne-Stokes respiration, but concurrently with the lengthening of the pauses there was progressive increase in the severity of the associated symptoms. These were entirely absent during the first 24 hours, but with the onset of mild Cheyne-Stokes breathing the patient became restless and frequently excited during the dyspnœic periods, and quiet and drowsy with the pauses. As the Cheyne-Stokes rhythm became more pronounced changes in the degree of consciousness were more marked, and on the last day of life, when the periods of apnœa averaged 40 seconds' duration, loss of consciousness was complete.

The records I have shown you illustrate an association of abnormal form of pulse and respiration which has hitherto not been recognised as of common occurrence, a circumstance probably explained from the ease with which the disturbances are overlooked unless the pulse and respiration are recorded graphically—since an abnormal rhythm in breathing is not always obvious, and alternation in the pulse is not readily recognised by the finger unless pronounced.

How far the combined phenomena of pulsus alternans, angina pectoris, and abnormal forms of breathing are simply concomitant events, or causally related, is a question too complex for discussion here; the frequency of the association, however, suggests that the grouping of symptoms is not merely coincidental. I have records showing decided grouped and periodic breathing from 7 out of 17 cases of angina pectoris with pulsus alternans.

PROGNOSIS.

I have already outlined the prognosis of pulsus alternans, it remains to be considered how it is modified by disturbed rhythm of breathing. It has long been recognised that when a patient with arterial disease begins to get attacks of

[5] The figure relating to one case only of Cheyne-Stokes breathing is reproduced.

[6] Sansom: Diagnosis of Diseases of the Heart, third edition, p. 242, London, 1881.

[7] Mackenzie: Ibid.

cardiac asthma the onset of dropsy and other pronounced symptoms of dilatation is not, generally speaking, long delayed, but exceptional cases are met with in which these attacks continue for years without much alteration in the size of the heart or in the general condition. It is quite otherwise, however, if such a patient presents pulsus alternans, dilatation inevitably ensues, and as a rule within a short time, and I am inclined to the view that if an inverted rhythm of breathing is present during the attacks the onset of dilatation and dropsy is hastened; dyspnœa is more urgent in such cases, and the strain on the heart proportionately greater.

Grouped Forms of Respiration.

The significance of grouped forms of breathing differs with the circumstances under which it occurs. I have already shown that it is present in some patients almost continuously when at rest, and disappears with exertion; it may be present both before and after the onset of dropsy, and so far as I have observed it furnishes no definite prognostic indication under these circumstances. In other patients in whom the breathing is regular when at rest a grouping of the respiration ensues only after exertion sufficient to cause breathlessness, and is commonly associated with anginal symptoms. I regard this as a combination of bad omen, and particularly so the more closely the rhythm approximates to that of Cheyne-Stokes type, which it not infrequently does.

Mild Form of Cheyne-Stokes Breathing.

A mild form of Cheyne-Stokes breathing may occur in these patients as a transient phenomenon or be present for days or weeks together. In some patients it occurs only during sleep, in others it continues when awake so long as the patient is quiet and at rest, but with excitement or exertion the breathing becomes regular; very rarely, as in a patient I saw recently, the disturbance in rhythm may continue while he is going about as usual. The subjective and associated symptoms are variable, patients may present but few symptoms other than cardiac distress and breathlessness on exertion, and the disturbance in rhythm may come and go without apparent cause or alteration in the condition of the patient. As a rule, he is unaware of the peculiarity in breathing, but there is generally complaint of a feeling of breathlessness, and sometimes dyspnœa and subjective respiratory sensations are pronounced; in other cases there is an entire absence of distress both during breathing and the short pauses. While as a rule this form of breathing usually occurs before decided symptoms of heart failure ensue, I have observed it in three patients who were very dropsical.

Although the presence of a mild form of Cheyne-Stokes breathing is always a matter for anxiety, it does not necessarily indicate a speedily fatal issue, as is generally thought. Undoubtedly the outlook is more unfavourable in such cases, but the immediate prognosis largely depends upon the presence or absence of associated mental phenomena.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—A meeting of the society will be held at 11, Chandos-street, Cavendish-square, London, W., on Friday, May 19th, at 8.30 P.M. A discussion on the Present Position of the Prophylaxis of Malaria by Quinine will be opened by Dr. W. Carnegie Brown. A paper on the Nature of Zambesi Fever, by Dr. W. I. Bruce of Chinde, and a note on Cultural Characteristics of a Variety of the Streptothrix of White Mycetoma, by Dr. N. F. Surveyor of Bombay, will be presented to the society.

ROYAL INSTITUTION. — On Tuesday next, May 16th, at 3 o'clock, Professor F. W. Mott will begin a course of two lectures at the Royal Institution on "The Brain and the Hand"; on May 18th Dr. W. N. Shaw, director of the Meteorological Office, delivers the first of two lectures on "Air and the Flying Machine": (1) "The Structure of the Atmosphere and the Texture of Air Currents"; (2) "Conditions of Safety for Floaters and Fliers."—At a general meeting of the members held on May 8th Dr. Donald W. C. Hood, Sir Francis Laking, Sir James Crichton-Browne (treasurer), and Sir William Crookes (honorary secretary), were nominated Vice-Presidents among other gentlemen.

SIX CASES OF "UTRICULOPLASTY" FOR UTERINE HÆMORRHAGE,

ONE OF WHICH WAS FOLLOWED BY PREGNANCY AND LABOUR.

BY VICTOR BONNEY, M.S., M.D., B.SC. LOND., F.R.C.S. ENG., M.R.C.P. LOND.,

ASSISTANT GYNÆCOLOGIST, MIDDLESEX HOSPITAL; SENIOR SURGEON TO OUT-PATIENTS, CHELSEA HOSPITAL FOR WOMEN.

WITHIN the last ten years a class of case has been generally recognised in which severe uterine hæmorrhage, intractable to treatment by drugs or curettage, coexists with a uterus neither much enlarged nor the seat of tumour formation. This condition, known as "hæmorrhagic metritis," "chronic fibrotic metritis," "fibroid metritis," and other similar terms, has up to now been chiefly treated by hysterectomy.

In the Transactions of the American Gynæcological Society for 1909 appeared an article by Howard Kelly, entitled "Amputation of the Corpus to Preserve the Menstrual Function." The American surgeon practises two operations. The first consists in a transverse amputation of the uterus through the corpus sufficiently high to preserve enough mucosa for the continuance of menstruation. The second consists in the excision of a wedge-shape piece of the whole thickness of the uterine wall, having its base at the fundus and its apex at or near the internal os. The two halves of the remaining portion of the uterus are then sutured together on the middle line so as to form a miniature uterus, or as Kelly terms it a "utriculus," whereby a portion of the corporeal mucosa is conserved sufficient for the continuance of menstruation, but not large enough to allow of excessive loss. It is with the second of these two operations that this paper is concerned.

In September, 1909, shortly after perusing an epitome of Kelly's paper, a case came under my care which appeared suitable for this operation, and since that date I have performed it on six occasions.

Technique of the Operation.

The technique I have employed appears identical with that of Kelly, whose detailed account I have only lately read.

The abdomen being opened, the uterus is pulled up and the area of contemplated excision is marked out with the point of the scalpel. This area, which includes the whole thickness of the uterus, is wedge-shaped, having as its base the whole breadth of the fundus nearly as far outwards as the tubo-uterine junctions, whilst its apex is on a level just above the upper limit of the moveable peritoneum on the front of the uterus. The uterus being steadied, the demarcated area is then excised with the scalpel. More or less oozing from the cut uterine wall ensues, but the bleeding is usually controlled by the pressure of the sutures subsequently introduced and tied.

The excision as I have performed it in all but one of my cases leaves in each moiety of the remainder of the body of the uterus a strip of mucous membrane continuous above with that lining the corresponding Fallopian tube, and below with that lining the cervical canal. If, however, as in the exception mentioned, the area of excision be extended rather more outwards, the whole of the upper part of the corporeal mucosa is removed, so that subsequently no communication exists between the uterine cavity and the tubes, and the patient is permanently sterilised. Before proceeding to apply the sutures the condition of these strips of mucous membrane is examined, and if the endometrium is thickened or otherwise abnormal they are curetted with a sharp Volkmann's spoon. I have done this in three of my cases. The ease and precision with which the curettement is effected is is striking contrast to the ordinary operation for this purpose.

The two moieties of the uterine body are now united to one another, first by a row of six or seven mattress sutures (Fig. 1) and afterwards by a continuous and more superficial suture (Fig. 2). Any oozing points left after this are secured by additional sutures, and the abdominal wound is then closed in the usual way.

The result of the operation is to leave a uterus much reduced in size, especially in breadth, so that at its upper end the tubo-uterine junctions are nearly

in contact. I have ventured to apply to it the term "utriculoplasty" as best describing its object, Kelly's expression "vertical resection" being less definitive, while such terms as "partial excision" or "partial amputation" would render the operation liable to be confounded with subtotal hysterectomy.

The following are brief notes of the cases in which I have performed this operation:—

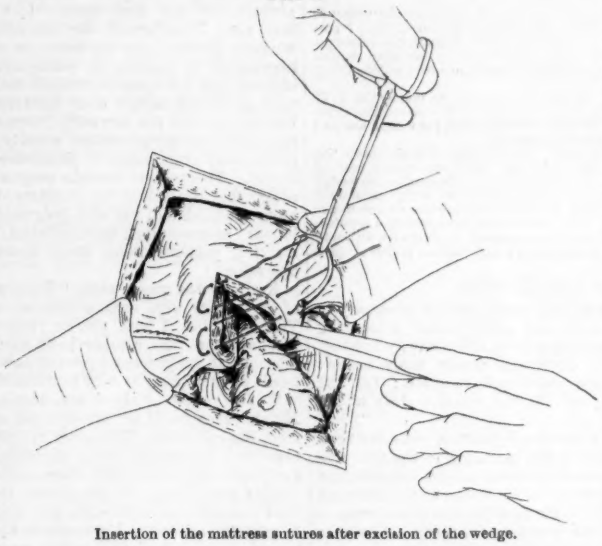
CASE 1.—The patient, aged 29 years, had previously borne two children. She was admitted into the Chelsea Hospital for Women, under the care of one of my colleagues, in April, 1909, having been losing more or less continuously since the preceding February. Previously to this the menses had been very excessive since the birth of the last child four years before. She was very anæmic. The uterus was curetted thoroughly, but the loss recurred a fortnight afterwards, and continued intermittently until September, 1909, when she was readmitted into the hospital under my care, being by this time extremely exsanguined.

My first intention was to perform subtotal hysterectomy, but on account of the youth of the patient I decided to adopt Kelly's procedure. Utriculoplasty was therefore carried out. Recovery was satisfactory except for a definite attack of broncho-pneumonia during the first week after the operation, and the patient left the hospital in good health.

For the first three months following the operation the menses were regular and painless, but only endured for one day; the anæmia rapidly disappeared, and the general health much improved.

The period in January, 1910, failed to appear, and shortly afterwards it became evident that the patient was pregnant. She was kept under careful observation for fear of eventualities, but none ensued. The uterus continued to enlarge normally until the thirty-second week, when premature labour came on. The child was born alive and survived. Dr. E. C. Osborne, who attended the confinement, wrote me that the leading feature was unusually strong pains with slow advance of the head, in spite of the small size of the child. Forceps were not required, however. There was slight post-partum hæmorrhage. The puerperium was normal. As the patient is still nursing her child the menses have not yet returned, but when I examined her a short while back the uterus had completely involuted to the size of the utriculus which I fashioned 18 months ago. Her general condition is excellent.

FIG. 1.



Insertion of the mattress sutures after excision of the wedge.

CASE 2.—The patient, aged 34, was married but sterile. She was sent to me by Dr. M. Lochhead of Harringay for continued bleeding, for which she had been twice curetted in a special hospital for women without avail. She was a stout masculine-looking woman and very anæmic. I operated in the Middlesex Hospital in May, 1910. The uterus was large, but contained no myomata. I performed utriculoplasty, having very thoroughly scraped away a thickened uterine mucosa before suturing the uterus. Recovery was uneventful. The immediate effect of the operation was to abolish the periods altogether for six months, during which time the patient lost her anæmia and became robust.

Since January of this year a blood-stained discharge has appeared which increased in spite of treatment up to a few weeks ago, since when it has declined and is now slight and intermittent. The patient's general health is exceedingly good.

CASE 3.—The patient, aged 32, married, was sent to me by Mr. W. J. Frankish of Chelsea. She had suffered for two years from excessive and long-continued hæmorrhages, for which she had been curetted in November, 1909, and in March, 1910, at two other hospitals, on both occasions without any effect.

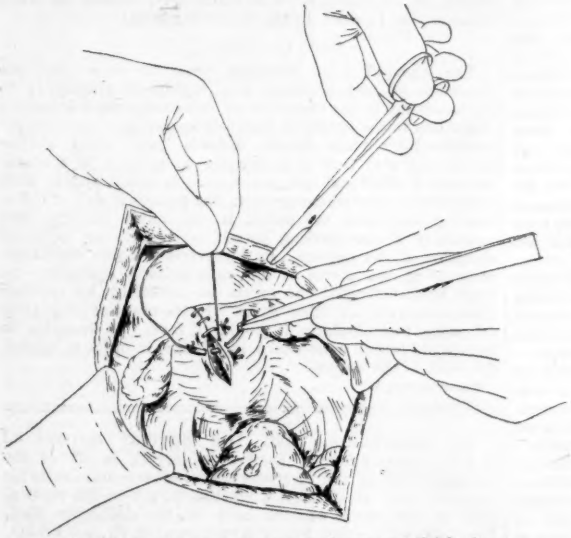
In July, 1910, the patient was admitted to the Middlesex Hospital where I operated on her. The uterus was enlarged, but contained no myomata. A number of pelvic adhesions were present. I performed utriculoplasty and the patient made a good recovery.

I have seen the patient at intervals since. The periods are regular each month, lasting about six to seven days and requiring the use of from six to eight diapers. Her general health is good.

CASE 4.—The patient, aged 39, was sent to me by Dr. Lochhead. She had been operated on for uterine hæmorrhage in a hospital for women in 1908, but without success. In June, 1910, she was curetted in the Middlesex Hospital, but again the operation failed in its intent.

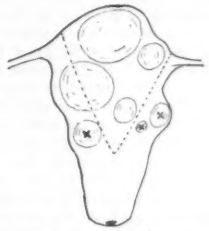
In October, 1910, the patient was readmitted under my care. On opening the abdomen I found a large uterus adherent by many fine adhesions to the neighbouring parts. No myomata were present. Utriculoplasty was performed, the lining membrane being curetted, and she made a good convalescence.

FIG. 2.



Completion of the utriculus by a continuous superficial suture.

FIG. 3.



Utriculoplasty applied to a small myomatous uterus. The dotted lines show the area of excision. The circles marked with a cross represent tumours separately enucleated.

FIG. 4.

Utriculoplasty applied to a myomatous uterus. The moieties ready for suture.

Since leaving the hospital the patient has had four periods, lasting from 7 to 9 days each, but not excessive in amount. She was a miserably anæmic thin woman before I operated on her, and her condition leaves much to be desired still, but she is very much better than she was.

CASE 5.—The patient, aged 37, was sent to me by Dr. F. S. Dawe of Chiswick. She had suffered from excessive periods for some years. Two years ago she was curetted in a general hospital, and was better for a while, but the condition returned. In August, 1910, profuse loss began, which lasted without intermission till November, when she was admitted to the Middlesex Hospital.

On opening the abdomen I found a number of adhesions the presence of which had not been suspected. These were broken down. I performed utriculoplasty, and as the utriculus had a tendency to retrovert I ventrofixed it. Since the operation menstruation has been regular and normal in amount, while the patient's health has very satisfactorily improved.

CASE 6.—The patient, aged 30, unmarried, sent to me by Dr. T. C. Neville of Putney, was a very anæmic woman of the masculine type. She had had almost continuous loss for two years, for which she had been curetted at Eastbourne, without success.

I operated in March of this year. On opening the abdomen the uterus, though not greatly enlarged, was found to be the seat of multiple myomata. I performed utriculoplasty, including in the wedge most of the myomatous nodules, the remainder being separately enucleated. The area of excision in this case included all the upper part of the corporeal mucosa. The patient has recovered in a satisfactory way. The operation is, of course, too recent to judge its ultimate results, but it illustrates its application to a myomatous uterus (Figs. 3 and 4).

The Value of the Operation.

In estimating the value of the operation it is necessary to compare it with hysterectomy, by which latter proceeding all the cases described might have been alternatively treated. This comparison may be discussed under three heads: (1) the maintenance of the menstrual function; (2) the possibility of pregnancy; and (3) the relative risks of the two operations.

1. *The maintenance of the menstrual function.*—As has been shown, the immediate effect of the operation in the first five cases was to relieve the patients of the excessive hæmorrhage from which they had suffered. In Case 2 hæmorrhage recurred slightly at the end of six months, but there seems a good prospect of an ultimately successful result. Cases 1, 3, 4, and 5 remain entirely satisfactory, while Case 6 is too recent to judge of the effect of the operation. Whether these results will be permanent can only be proved by time. In the three cases published by Kelly where the operation has been done for hæmorrhage the patients were satisfactory at the end of three years, one year, and one year respectively.

The question as to the value of preserving the menstrual function has in this connexion to be specially considered. Experience shows that the occurrence of menstrual loss is by no means a necessity to healthy feminine existence. Women who have never menstruated are occasionally met with, the anomaly being associated with no evil results. In others long periods of amenorrhœa from time to time occur without obvious ill-effect to the general health. The results of hysterectomy for myomata also show that perfect health is compatible with permanent cessation of the menses. Most women regard menstruation as an unmitigated nuisance, and view the prospect of its cessation after hysterectomy with at least indifference, but more often with actual relief. On the other hand, a certain proportion of patients from motives of sentiment dislike the idea of an enforced menopause, even though it be only "apparent" because the ovaries are retained.

The investigations of A. Giles and the experience of other surgeons go to prove that in spite of conservation of the ovaries, the removal of the uterus does in a good number of cases bring on the flushings and nervous symptoms of the true menopause some years earlier than in normal women.

It may be asked how the preservation of a portion of a wholly diseased organ can be justified? In reply another question may be propounded—namely, as to how far these hæmorrhagic uteri are diseased? In spite of much research it must be admitted that the criteria of "chronic fibrotic metritis," "uterine arterio-sclerosis," and other similar conditions are very ill-established. Of a number of such cases that I have examined comparatively few have furnished histological evidence of inflammatory change. The whole process of menstruation—why the loss begins, and still more why it leaves off—stands practically unexplained, and until we have a fuller understanding of the normal phenomenon our knowledge of these cases of excessive menstruation will remain defective. The fact that after utriculoplasty the conserved portion of a profusely bleeding uterus may revert to the performance of normal menstruation proves, I think, that the uterine wall in these cases is not always so greatly abnormal.

2. *The possibility of pregnancy.*—The slight advantages to be gained by preserving the menstrual function in these cases would not by themselves weigh against the certainty of permanent cure which hysterectomy offers, unless the patient herself, particularly if comparatively young, was very desirous of avoiding the latter operation. To be able, however, to leave the patient in possession of a uterus capable of child-bearing is a great gain. That such is possible is proved by my first case. I must confess that the first time I performed the operation I greatly questioned whether it would not be better to prevent the possibility of pregnancy by ligating or removing the tubes. But I considered that the operation would be deprived of the greater part of its advantage over hysterectomy by so doing, and bearing in mind the successful manner in which the uterine scar after Cæsarean section usually withstands the strain of subsequent pregnancy, I determined to leave the tubes intact. This patient became pregnant less than four months after the operation—i.e., before the uterine scar could have consolidated, yet the pregnancy was normal and the labour successfully accomplished. Of my four other married patients none have become pregnant since the operation.

Kelly in his paper says, "What would happen in a case of pregnancy with such a reduced uterus I do not know?" The case that I here put on record answers the question. The fact that the uterine body though reduced to half its normal size yet possesses growth power sufficient to meet the needs of pregnancy is very remarkable.

3. *The relative risks of utriculoplasty and hysterectomy.*—My six cases have all made rapid and excellent recoveries from the operation. Theoretically, utriculoplasty for "fibrotic metritis" or small corporeal myomata should certainly not be associated with more risk than subtotal hysterectomy under similar conditions. In either case the site of the operative field is aseptic to begin with, and infection from without can be guarded against. Inasmuch as utriculoplasty requires the use of a good deal of ligature material the strictest antiseptic precautions are necessary. There is less risk of profuse post-operative hæmorrhage after utriculoplasty than after hysterectomy, because no large vessels are divided, but, on the other hand, there is more liability to oozing between the stitches. The parietal wound should not be closed until the uterine suture line is entirely dry. Finally, the risk of pulmonary embolism, a fatality much more commonly associated with hysterectomy than with any other operation, should be very small after utriculoplasty, because no trunk veins require ligature during its performance.

Conclusions.

The cases I have recorded seem to show that the operation of utriculoplasty is a legitimate alternative to hysterectomy in the treatment of intractable uterine hæmorrhage due to the condition variously known as "hæmorrhagic metritis," "chronic fibrotic metritis," and other similar terms, and also that it is feasible to apply it to a uterus the seat of small multiple myomata. It would appear to be preferable to hysterectomy when the patient is still of child-bearing age, and the cervix is reasonably healthy, and especially if the patient herself objects to an enforced abolition of the menses. In the reverse of these conditions removal of the uterus is the more suitable operation—by total hysterectomy if the cervix be unhealthy, by subtotal hysterectomy in all other cases. In the event of pregnancy following utriculoplasty it would, I think, be desirable to induce the labour some weeks in advance in order to lighten the work of the uterus.

Harley-street, W.

IN connexion with the special appeal of H.R.H. Princess Louise, Duchess of Argyll, in aid of the building fund of the Heritage School of Arts and Crafts for Crippled Boys at Chailey, a meeting in aid of the medical side of the work will be held in the Jehangier Hall, University of London, South Kensington, S.W., on Friday, May 26th, at 3.30 P.M. Sir Thomas Barlow, Bart., will preside, supported by many leading members of the medical profession. All those interested in the work of these schools and desirous of helping towards the completion of the scheme are invited to attend. Academic or official costume will be worn, and robing rooms will be provided.

THE NATURE OF HÆMATOCOLPOS FLUID, AND THE CHARACTER OF THE OBSTRUCTING MEMBRANE.[1]

BY W. BLAIR BELL, B.S., M.D. LOND.,
ASSISTANT GYNÆCOLOGICAL SURGEON, ROYAL INFIRMARY, LIVERPOOL.

HÆMATOCOLPOS is an unusual if not very rare condition. The following is a report of three cases of hæmatocolpos, with deductions as to the chemical composition of the menstrual discharge and the cause of its normal non-coagulability, and of the acidity of the vaginal secretion; the character of the obstructing membrane, with its bearing on the development of the vagina is also considered. I record the cases not so much because of their clinical interest as because of the detailed examination made of the retained secretions and obstructing membranes in the second and third cases.

CASE 1.—The patient, aged 18 years, was admitted to the Liverpool Royal Infirmary on May 4th, 1909. She had never menstruated, and she complained of severe periodic attacks of pain, and of a gradually increasing swelling in the abdomen. For the last three months the pain had been very severe and of a cramping character for a few hours at regular monthly intervals. There had also been dysuria at these periods.

On abdominal examination the patient was found to have a central cystic swelling rising out of the pelvis and reaching to the umbilicus. On the top of this a small hard body could be felt. This was the uterus riding on the top of the distended vagina. The tumour was not tender on palpation. On separating the labia the vaginal orifice was seen to be occluded by a bulging membrane. On careful examination the hymen was plainly visible stretched round the periphery of this structure.

An operation was performed on May 6th. The septum was incised, and about three pints of a thick chocolate-coloured fluid were evacuated. After evacuation an attempt was made to see or feel the cervix, but it was too high up. The vagina was then washed out with sterile water and a drainage-tube with gauze wick was inserted. The patient was discharged on May 21st. The vagina was still capacious and the cervix out of reach.

After-history.—July, 1910: The patient has menstruated normally since the operation. The vaginal orifice is a circular aperture admitting the finger with difficulty; the cervix is easily reached, and the uterus is normal in position.

CASE 2.—The patient, aged 15 years, was admitted to the Infirmary on May 9th, 1910. She had never menstruated, and was complaining of retention of urine. For five months there had been increasing difficulty in micturition.

On abdominal examination it was found that a large oval cystic swelling rising out of the pelvis extended about two inches above the umbilicus. On the top of this tumour and to the left of the middle line another small hard swelling (the uterus) could be made out. On separating the labia a thin bluish membrane was seen bulging at the vaginal orifice. The hymen appeared to be irregularly attached to the surface of this, forming strands reaching to the periphery, where the membrane became tougher.

An operation was performed on May 10th, and four pints of chocolate-coloured fluid were evacuated. The vagina was then washed out with sterile water. The cervix was so high up that it could neither be seen nor felt. The patient was discharged on May 23rd.

After-history.—Two weeks later the vagina was found to have shrunk considerably and the cervix could just be felt. Two months later the patient reported that she had had two normal periods, but she refused to be examined further.

These two cases were admitted to the Infirmary under the care of my colleague, Dr. T. B. Grimsdale, and I am indebted to him for permission to investigate them.

After this paper had been written Dr. T. W. Eden very kindly sent me material from a third case to investigate, with permission to add the results to my communication. I append the clinical history in Dr. Eden's own words.

CASE 3.—The patient, aged 15 years, was admitted to the Chelsea Hospital for Women on Feb. 7th, 1911. For six months previously she had complained of attacks of slight abdominal pain occurring at irregular intervals; these pains had never been severe. On Saturday, Feb. 4th, she had an attack of severe pain, chiefly in the lower abdomen; this lasted for 24 hours, and was accompanied by complete retention of urine. The catheter was passed, and thereafter the pain was relieved and did not return acutely, although a certain amount of discomfort persisted.

On examination an elastic, ill-defined swelling was felt in the hypogastric region; on the summit of this swelling, and inclined to the left side, was a small solid body recognised as the uterus. The external genitalia were normally developed with the exception of the hymen. This formed a septum completely obstructing the entrance to the vagina; it was crossed by a well-formed median raphe, and in its anterior part was translucent, showing clearly the dark colour of the retained fluid. On rectal examination a tense elastic swelling was felt, which practically filled the pelvic cavity.

The hymen was divided by a median incision and each lateral half clipped away for microscopic examination. About half a pint of dark chocolate-coloured viscid fluid escaped. The vagina was well douched with a large quantity of sterile saline solution until all the retained fluid had been removed. On examination the external os was found closed, and no sign of dilatation either of the uterine cavity or of the tubes could be detected.

[1] A paper read before the Royal Society of Medicine, March 2nd, 1911.

The main points of clinical interest in connexion with these cases are: (1) the large size of the collections in the vaginæ of quite young girls in the first and second cases; and (2) the fact that in none of the three cases was there any attempt at dilatation of the uterus. I have, however, always been of opinion that hæmatometra must be a rare and very late complication of hæmatocolpos.

I am not aware that a full examination of the retained secretions in a hæmatocolpos has ever been made. Yet there are many undecided points of interest to be discussed presently on which light is needed and can only be obtained by such an examination as that which I will now describe. I regret to say that a chemical and bacteriological examination was not carried out in the first case, for, unfortunately, the material was lost owing to the breakage of the vessel containing it.

Examination of the Hæmatocolpos Fluid.

A *histological* examination was made in each case. The solid contents consisted of red corpuscles in all stages of disintegration, epithelial cells from the uterus and vagina, and, above all, a very large proportion of living polymorphonuclear leucocytes—such, in fact, as is seen in menstrual blood on the first day of the discharge. Miss Louise McIlroy, who was present at the operation in Case 3, examined some of the fluid and informed me that the leucocytes were alive, as they readily took up tubercle bacilli. This is what one might expect, as there is a definite diapedesis of living leucocytes during menstruation.

A *bacteriological* examination made in Cases 2 and 3 showed the fluid to be sterile.

A *chemical* examination (conducted in the Bio-chemical Laboratory in the University of Liverpool) was made in Cases 2 and 3, the results of which are here given.

Case 2.—The fluid is chocolate coloured and extremely viscid. There is a large quantity of *mucin* present; the quantity was not definitely estimated, but will be referred to again presently. *Pigments* present are oxyhæmoglobin and a little methæmoglobin. Total solids, 10 per cent.; water, 90 per cent. Total nitrogen, 1·43 per cent.; total protein from N, 9 per cent. *Fibrin ferment* and *fibrinogen* are absent. *Lactic acid* is present, the fluid having an acidity to phenolphthalein equivalent to 15 c.c. N/10 NaOH per 100 grammes of fluid. *Calcium.*—300 grammes of the fluid yielded 0·0529 gramme of CaO. This is equivalent to 0·0126 per cent. of calcium.

Case 3.—The fluid, of which only a small quantity is available, is dark red in colour, but not nearly so viscid as the previous specimen (Case 2). There is only a small quantity of *mucin* present (*v. infra*). *Pigments* present are oxyhæmoglobin, with a trace of methæmoglobin. Total solids, 10·1 per cent.; ash, 0·34 per cent.; water, 89·9 per cent.; blood, 25 per cent. Total nitrogen, 1·36 per cent; total protein from N, 8·5 per cent. Amount of protein from the blood present, 5 per cent; remaining protein (mucin), 3·5 per cent. Solids undetermined, 1·6 per cent. *Urea* could not be detected. *Fibrin ferment* and *fibrinogen* are absent. *Lactic acid* is present, but the amount of material is insufficient to estimate the quantity. It is, however, obvious that there is far less than in Case 2. There is insufficient material to estimate the amount of *calcium* present.

There are many points of considerable importance to be deduced from these results. It must, of course, not be forgotten that the contents of a hæmatocolpos do not come only from the interior of the uterus. There are also to be taken into account the secretions of the cervix and the transudations, and in Case 2 the secretions of the vagina. So that while important deductions can be made in regard to the nature of the menstrual and other secretions, no absolute quantitative estimates can be made of the composition of the menstrual discharge alone by an examination of the fluid contained in a hæmatocolpos.

To discuss the more important points. It was found that mucin formed a large proportion of the secretions in Case 2. The exact quantity was not estimated, as it would have been a matter of considerable difficulty, but it was roughly calculated to be about 80 per cent. of the solid contents, leaving 20 per cent. of blood. This is to be accounted for by the presence of glands in the vagina, to be described later. In Case 3 the quantity of mucin was much smaller (about 33 per cent. of solid contents).

The absence of hæmatin was perhaps the most interesting point in regard to the blood pigment.

The protein content was about the same as that of ordinary blood.

The next point is one of very considerable importance—namely, that neither fibrin ferment nor fibrinogen was to be detected. While this chemical work was in progress a paper by Cristae and Denk[2] appeared. In this they gave the

[2] Cristae and Denk: Wiener Klinische Wochenschrift, 1910, Band xxiii., p. 234.

FIG. 1.

FIG. 2.

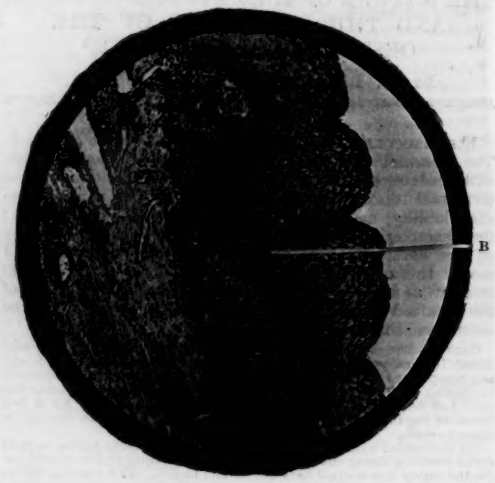


FIG. 3.

FIG. 4.

FIG. 5.

FIG. 1.—Section through the occluding membrane from Case 2 showing squamous epithelium on the outer surface (B), and columnar epithelium with glands and some squamous epithelium on the inner surface (A). × 75.

FIG. 2.—Section through the occluding membrane from Case 2 showing outer surface covered with squamous epithelium (B). × 200.

FIG. 3.—Section through the occluding membrane from Case 2 showing inner surface covered with squamous (B) and columnar epithelium with numerous glands (A). × 200.

FIG. 4.—Section through the occluding membrane from Case 3. It is covered with squamous epithelium on both surfaces, but there is a thicker layer on one side than on the other. × 75.

FIG. 5.—Section through a normal hymen. × 30.

results of their experimental inquiry into the non-coagulability of menstrual blood. They, also, found an absence of fibrin ferment, which they state is retained or destroyed by the endometrium. The importance of this fact clinically is considerable, for it brings us to the conclusion that the formation of intra-uterine clots during menstruation must be due to an abnormal condition of the lining membrane of the uterus. It may be pointed out that post-partum blood clots because it does not pass through the endometrium.

While mentioning the recent paper of Cristae and Denk I must take exception to their presentment of my views on the relationship of the calcium metabolism to menstruation, which they appear to have but imperfectly understood. And also to the conflicting results they have obtained in regard to the calcium content of the systemic blood during menstruation, since they relied upon Wright's clotting test for their estimation of the calcium content, a wholly inaccurate and unreliable method for the purpose, for the calcium contained in blood is only one factor—and that a small one—in the clotting process—a point that is too often overlooked. I have never correlated the calcium content in any way with the non-coagulability of menstrual blood.

Since I have also found that there are no fibrin ferment and fibrinogen in normal menstrual secretion, it may then be taken as proved that the absence of fibrin ferment and fibrinogen is the cause of the non-coagulability of menstrual blood, which will clot readily if normal blood be added to it. I hope to publish shortly some further researches in regard to pathological clotting as well as to the normal non-coagulability of menstrual fluid.

The next point of interest is the presence in considerable quantity of lactic acid. It is common knowledge that Döderlein [3] has attributed the formation of lactic acid in the vagina to the so-called vagina bacillus, but it is clear that even though certain bacteria can give rise to lactic acid, this cannot be considered the normal method of production in the vagina, for, as already stated, the hæmatocolpos fluid was sterile (although the vagina bacillus was carefully looked for), and yet it contained lactic acid. The actual method of origin of the lactic acid is therefore still unknown, although it is probably derived from the decomposition of mucin by enzymes without the intervention of bacteria. In this connexion it is interesting to note that the amount of lactic acid present in Case 3 was much less than in Case 2, in which the quantity of mucin also was much greater.

The quantitative amount of calcium in normal menstrual discharge cannot easily be estimated from an examination of hæmatocolpos fluid because the dilution of the menstrual discharges with mucin and vaginal transudations makes it difficult to estimate accurately how much of the whole consists of uterine menstrual discharge. By my method of calcium estimation [4] the ionisable calcium in the fluid from all these cases was more than double the amount contained in normal systemic blood. Further, the total quantity of calcium in the fluid (0·0126 per cent.) from Case 2 is almost exactly double that found in normal systemic human blood.[5] Consequently it is obvious that the proportion is far higher, as I have shown in previous communications, in undiluted (with mucin) menstrual blood from the uterine cavity. The chemical examination of this fluid, therefore, entirely confirms my views in regard to the amount of calcium contained in the uterine secretion (as well as in the other excreta) during menstruation.

Examination of the Vaginal Membrane.

Case 2.—The histological examination of the obstructing membrane from this case gave results of much interest. The sections show that the outer surface of the membrane is covered with stratified squamous epithelium (Figs. 1 and 2), which in parts appears to be rolled in, such a "rolling in" representing the under surface of one of the strands of hymen (already alluded to) which is normally covered with stratified squamous epithelium on both surfaces. When, however, one examines the inner surface of the obstructing membrane it is seen that the lining epithelium consists of columnar epithelium, which dips down and forms glands in many places (Figs. 1 and 3). But on closer examination we see that even on this inner surface there are patches of squamous epithelium which appear to merge with the columnar epithelium already mentioned (Fig. 3). What is the interpretation of this? I think it is simple.

It has been recognised since first pointed out by Matthews Duncan that in these cases of hæmatocolpos with occlusion of the lower end of the vagina the obstructing membrane is rarely the hymen; it is usually the lower end of the vagina. I have already, in a paper read before this society,[6] pointed out how the vagina may be developed in two ways. In one, the commoner, the urogenital sinus forms the lower third; and in the other the vagina is formed entirely from Müllerian downgrowths.

Occlusion of the vagina is most likely to occur in those cases in which the urogenital sinus plays no part in the development of the vagina, for in them the mesoblastic columns have further to go, and may fail to reach the surface. This was probably a case of that description, and it is, therefore, evident why we find the vagina lined with columnar epithelium.

One might reasonably expect to find the vaginal tube, which is derived from Müllerian downgrowths, lined originally with columnar or cubical epithelium, and the conversion into squamous epithelium to be a subsequent change. This I offer as the explanation of the admixture of columnar and squamous epithelium found in sections of this membrane.[7] The obstructing membrane from Case 3 has squamous epithelium on both surfaces (Fig. 4). But it will be observed that this forms a much thicker layer on one (? outer) side than on the other. The fact of there being squamous epithelium on both surfaces does not prove it to be an imperforate hymen; indeed, the macroscopical appearances of the membrane as to whether it were surrounded or crossed by hymen would have to be taken into account in coming to a decision. I am of opinion that the thin layer of epithelium may indicate that it is of vaginal origin. In a section of a normal hymen the epithelium is of rather more equal depth and similar in arrangement on the two surfaces (Fig. 5).

The following conclusions may be drawn from the foregoing observations. 1. Hæmatometra rarely occurs with hæmatocolpos, and can only be a very late complication. 2. The non-coagulability of menstrual blood is due to the removal of fibrin ferment and fibrinogen, probably effected by the endometrium. 3. The lactic acid present is not produced by bacteria. 4. The calcium content of menstrual discharge is very high (*vide* previous papers by the author). 5. The vagina is for the most part developed from the Müllerian ducts, and its lining epithelium may therefore occasionally be of a columnar type, and glands may be present.

Liverpool.

[3] Döderlein: Das Scheidensekret, Leipzig, 1892.

[4] See Brit. Med. Jour., April 20th, 1907, and February-March, 1909.

[5] Human blood contains about 48 per cent. corpuscles (Schäfer). The serum contains 0·155 part of CaO per 1000 parts (Oppenheimer). This is equivalent to 0·1036 part of Ca per 1000 parts. The corpuscles contain 0·1 part of $Ca_3(PO_4)_2$ per 1000 parts (Oppenheimer). This is equivalent to 0·04 part of Ca per 1000 parts. From these figures the amount of calcium in human blood is found to be 0·072 part per 1000, or 0·0072 parts per cent. That is to say, human blood contains 0·0072 per cent. Ca, as compared with hæmatocolpos fluid, which contains 0·0126 per cent. Ca.

[6] Transactions of the Royal Society of Medicine, vol. xxxiii., p. 311.

[7] Since the writing of this communication Victor Bonney and Glendinning have published a paper on a condition they have designated "adenomatosis vaginæ." The histological findings in their case are of a similar nature, and I think the construction I have put on my observations is applicable to theirs.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—At a meeting of the President, Vice-President, and Council held on May 2nd, the following examiners were elected:—Court "A.": Anatomy: D. P. Fitzgerald and A. Campbell Geddes. Surgery: C. Arthur K. Ball, Robert J. Harvey, J. B. Moore, and Seton Pringle. Physiology and Histology: J. A. Scott. Pathology and Bacteriology: Arthur Hamilton White. Midwifery and Gynæcology: Frederic W. Kidd. Biology: John J. Burgess. Ophthalmology: Arthur H. Benson and Herbert H. B. Cunningham. Chemistry: Robert J. Montgomery. Sanitary Law and Vital Statistics: Edward F. Stephenson. Engineering and Architecture: James H. Fergusson. Languages: William Kennedy. Mathematics, Physics, Dictation, and English Essay: J. R. Cotter. Court "B": Anatomy: A. Campbell Geddes and G. Jameson Johnston. Surgery: C. Arthur K. Ball, Leveson G. Gunn, J. B. Moore, and S. Pringle. Physiology and Histology: E. L'Estrange Ledwich and J. Alfred Scott. Pathology and Bacteriology: Robert J. Rowlette and Arthur Hamilton White. Midwifery and Gynæcology: Frederic W. Kidd. Chemistry and Physics: Edwin Lapper and Robert J. Montgomery. Dental Surgery and Pathology: George M. P. Murray and William G. Story. Mechanical Dentistry: Daniel L. Rogers and Edward Sheridan.

THE

HIDDEN DANGERS OF APPENDICITIS: A PLEA FOR EARLY OPERATION.

BY HERBERT J. PATERSON, M.A., M.C., M.B. CANTAB., F.R.C.S. ENG.,

ASSISTANT SURGEON TO THE LONDON TEMPERANCE HOSPITAL.

(With Coloured Plate.)

"WE should have no deaths from appendicitis, *but we are having them.*" These are the words of Dr. J. B. Murphy, written in the year 1904. Although such a view aims at an ideal not likely to be attained, still the remark is a forceful and suggestive one. We should at least aim at the ideal, even if our efforts to attain it are unsuccessful, and there are, I venture to think, few, if any, who would assert that the results obtained in the treatment of appendicitis at the present time are within measurable distance of that ideal.

Nearly 2000 persons die annually in England and Wales from appendicitis, and according to the returns of the Registrar-General during the seven years 1901 to 1907 appendicitis claimed 12,000 victims. The mortality therefrom in the London hospitals is over 10 per cent., probably nearer 20 per cent. Such a mortality is truly appalling, and I have no hesitation in saying that the great majority of these deaths are preventable, and that such a high mortality is a reproach to our profession. Nor can the blame be laid at the door of the general practitioner, as is sometimes done, for the general practitioner reflects the teaching of the schools. We must all share it, physicians, surgeons, and general practitioners alike.

We have in this country been slow to advocate and to practise immediate operation as soon as the diagnosis is made. There are now fortunately some who advise this course, but probably more who do not. If early operation were the rule, the mortality from appendicitis should not be more than 2 per cent. We are sometimes told that the general public is averse from early operations. Whose fault is this? If the medical profession were unanimous we should hear little of objections on this score. How often we read in the daily papers that So-and-So is suffering from appendicitis, but an operation is not considered necessary at present? A few days later we read his obituary notice, with the sinister words, "Death following an operation." Had the operation been performed earlier an obituary notice would, in the great majority of cases, have been unnecessary.

There has been much discussion as to when to operate for appendicitis. By some the clinical course of appendicitis has been divided into stages, and operation is advised, or not advised, according to the day of disease. These time limits seem to me to be out of place in surgical practice. If it were the rule for all cases to be operated upon early there would be no need to discuss the best time for operation. The risk of operation in the early stage is scarcely greater than that of an exploratory laparotomy. No drainage is usually necessary, the patient is convalescent in two or three weeks, there is little risk of ventral hernia, and the patient is freed from the liability to further attacks. This seems to me to be true conservative surgery; the policy of procrastination has no claim to such a title. The patient has, under the most favourable conditions, to wait three weeks before an interval operation can be performed. During this period of waiting there is ever present the chance that the inflammation of the appendix may suddenly light up and require immediate operation, under less favourable circumstances than if it had been done earlier.

Even when the progress of the attack seems to be favourable things are not always as they seem. Five years ago I had in one year four patients under my care who recovered from the initial attack, but who before the time for an interval operation had arrived showed sudden signs of septicæmia and died within a few days. In each case the temperature had been normal for from seven to ten days, then there was a sharp rise, and the patients rapidly became so ill that any operation was out of the question. At the post-mortem examinations, in two of the cases there were multiple abscesses in the liver, in the third portal pyæmia, and in the fourth a small subdiaphragmatic abscess.

To assert that most patients recover without operation is beside the point. It is equally true that many die, and it is, I maintain, absolutely impossible to foretell which cases will do well and which will not. The point which I desire to emphasise is this: the local signs and general condition of the patient frequently give no indication whatever of the gravity of the condition within the abdomen. Let me illustrate this with a brief reference to a few such cases.

CASE 1.—A boy, aged 19 years, had been seized with acute abdominal pains on the day preceding his admission to the London Temperance Hospital. On admission he complained of considerable pain, but when I saw him later he was quite comfortable and sleeping; pulse 92 and temperature 100° F. At that time I had not been convinced of the advisability of operating immediately a diagnosis could be made, so I held my hand. When I saw him later in the day he was still comfortable; pulse 88 and temperature 100°, and he said that he had little or no pain. The abdomen was not distended and was soft, except in the right iliac region, where there was slight rigidity and tenderness. Again I decided to wait, but on reaching home I reflected that after all the intra-abdominal condition might be more serious than the symptoms indicated, so I returned to the hospital and operated. On opening the abdomen there was some free fluid in the peritoneal cavity, and the appendix, which was gangrenous, was on the verge of perforating at one spot (see Plate, Fig. 1). There were absolutely no adhesions, and there was little doubt that within a few hours there would have been perforation and general peritonitis.

CASE 2.—A young woman, aged 21 years, was seized with sudden pain all over the right side of the abdomen two days before admission. She had had no previous attack. The pain gradually decreased in severity, and on admission she stated that it had entirely gone. The pulse was 106 and the temperature 101° F. There was some rigidity in the right rectus, as well as slight tenderness. Two hours later the pulse was 100 and the temperature 99·4°. The patient looked quite well, and it appeared to be a case which was quieting down. Following my rule, however, I decided to operate, and I found the appendix enormously distended and the distal half completely gangrenous. (See Plate, Fig. 2.) There were no adhesions.

CASE 3.—A girl came up to the casualty department of the hospital complaining of pain in the lower part of the abdomen. There was no tenderness. She had vomited twice and the temperature was just over 100° F. The casualty officer thought that she had slight ptomaine poisoning, and so she was treated and sent home. She returned two days later and reported that the pain was no better; she had vomited once again; the temperature was 101°, and there was localised tenderness in the right iliac fossa with impaired movement. She did not look at all ill. On opening the abdomen I found the peritoneal cavity to be full of very offensive, purulent fluid. The appendix contained a large concretion; the distal half was completely gangrenous and was perforated. (See Plate, Fig. 3.)

CASE 4.—A young woman, aged 19 years, was seized with general abdominal pain three days before admission to hospital. The next day she vomited twice, but the pain was easier. On admission the temperature was 99·8° F. and the pulse was 112, but she had no physical signs, not even tenderness in the right iliac fossa. Under the anæsthetic it was noticeable that there was a slight impairment of respiratory movements in the right iliac region. I found an acutely inflamed appendix, with a perforation from which pus was escaping. There were no adhesions round the perforation, but fortunately the collection of pus was local, and had not yet become disseminated.

CASE 5.—A woman, aged 25 years, was taken ill two days before admission to hospital with pain in the lower part of the abdomen and vomiting. On the following day the pain was easier. On admission she looked in fair health and was not in much pain; the temperature was 101° F. and the pulse was 112. The abdomen was not distended or rigid. There was marked tenderness in the right iliac fossa, where there was a smooth, oval, hard mass, which I thought to be a localised abscess. On opening the abdomen I found the cæcum enormously thickened and infiltrated, forming the swelling felt before operation. The appendix was greatly enlarged and distended and was gangrenous at its base (see Plate, Fig. 4), and, giving way, it allowed the escape of pus and fæces and a large concretion. The end of the caput coli was gangrenous and was enfolded by suture. There were no adhesions.

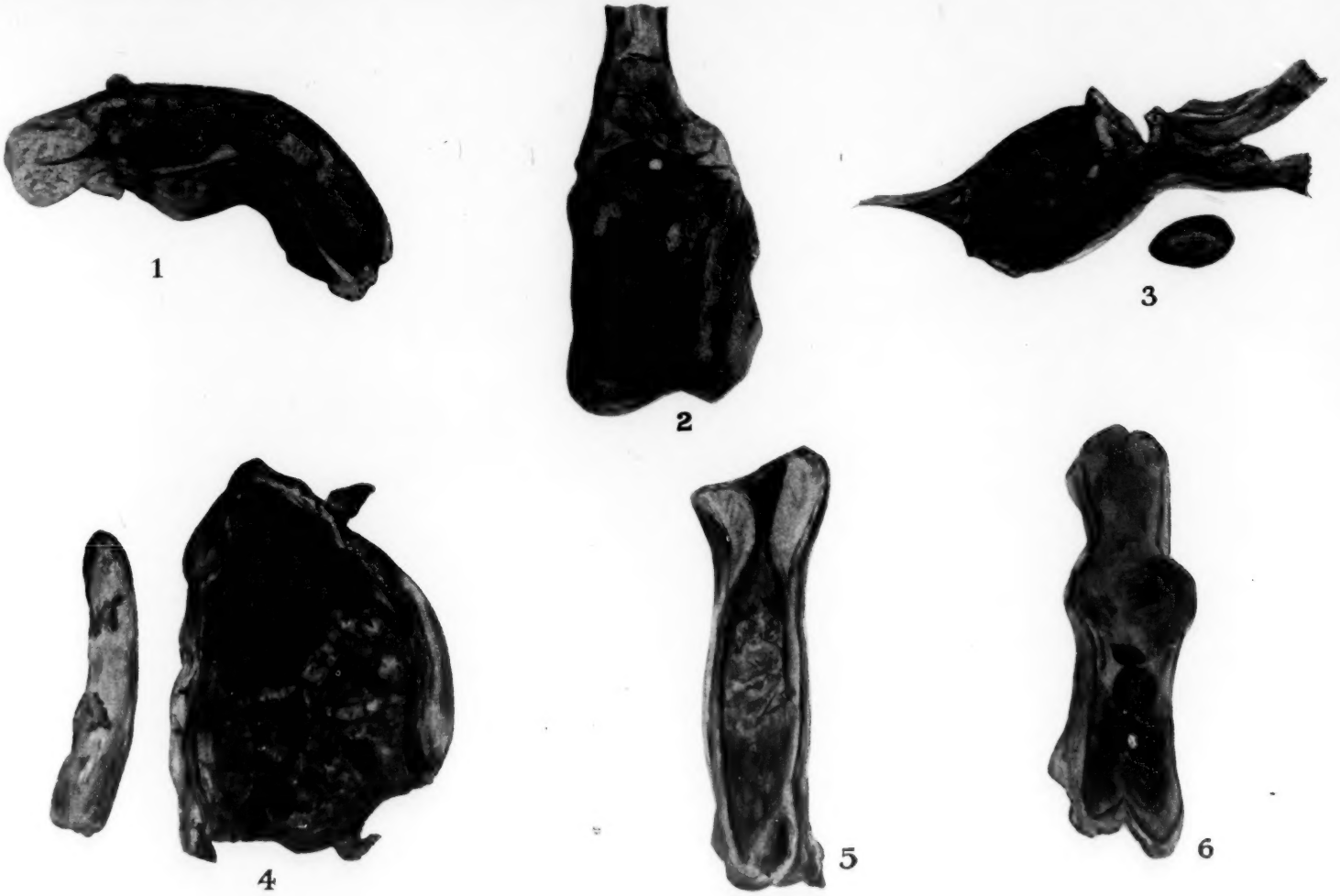
CASE 6.—A girl, aged 16 years, was taken ill on the morning before admission to hospital with severe abdominal pain. She left work, but did not go to bed. The next day she still had some pain, and she vomited once. Towards evening the pain was somewhat easier. On the evening previous to the onset of the pain she had had a supper of fried fish. On admission she looked in perfect health; the temperature was 99·4° F. and the pulse was 114. She referred her pain to the right iliac fossa, where there was some tenderness on deep pressure, but no rigidity. At first I was inclined to doubt its being a case of appendicitis, especially in view of the history of fried fish, but I decided to operate. The appendix was found to be acutely inflamed, greatly swollen, and œdematous; it was full of pus and the middle area was gangrenous. There were no adhesions. (See Plate, Fig. 5.)

CASE 7.—A man, aged 25 years, was awakened early in the morning by pain in the umbilical region. In the course of the morning he vomited several times and during the day the pain became worse. He was admitted to hospital on the same evening. He did not look ill; the temperature was 100° F. and the pulse was 76. He referred the pain to the umbilical region, and said that it was less acute than it had been earlier in the day. The abdomen was not distended; there was some tenderness on deep pressure in the right iliac region, but no rigidity. The appendix was much thickened and bulbous; the distal portion was gangrenous and at one spot was almost perforated.

CASE 8.—The last appendix on the Plate (Fig. 6) was removed from a boy, aged 11 years, who had been ill with abdominal pain for 24 hours before admission (second attack). When I saw him he had very little pain, the abdomen moved fairly on respiration, there was some tenderness in the right iliac fossa, but no rigidity. The temperature was 101° F. and the pulse was 120. The peritoneal cavity was full of purulent fluid and the appendix in its distal portion was gangrenous and perforated. For three days he was desperately ill, but thereafter made an uneventful recovery.

The figures on the Plate are excellent reproductions of water-colour sketches made for me by Sister Helen Clayton, to whom I wish to express my indebtedness and thanks for

Supplement to THE LANCET.



To illustrate Mr. Herbert Paterson's paper on the Hidden Dangers of Appendicitis.

the accuracy and fidelity with which she has portrayed the appearances of the appendices immediately after removal.

Not one of the above patients appeared to be seriously ill. Having regard to the physical signs, it would have seemed perfectly justifiable to have postponed operation, and yet in two of them there was general peritonitis. In all the appendix was gangrenous or perforated. All of them recovered, and from the operation findings I feel justified in asserting that recovery would have been far less likely had operation been postponed.

We are sometimes taught that perforation of the appendix gives rise to a characteristic train of symptoms. Although this is true in theory, it is a dangerous postulate in practice, for by the time the symptoms are characteristic the opportunity for a successful operation is often passed. The plain teaching of clinical observation is this, that in a given case of appendicitis it is impossible to foretell what the subsequent course of the disease will be, whether it will tend to spontaneous subsidence or to a rapidly fatal termination. The time for operation is as soon as the diagnosis is made.

Many of those who are in favour of operation in the cases which are seen early—that is, within the first 24 or 48 hours—counsel delay in those cases which are seen in the later stages of the spreading inflammatory process. They tell us that "each case must be judged on its merits." This is one of those high-sounding phrases which do not stand the test of practical application. In plain language, this teaching premises that the clinician can picture to himself accurately the condition of the appendix, and can predict what will happen in the course of the next few days. Such a prescience is obviously unattainable, and, if challenged, few, if any, will lay claim to such power, and yet nothing short of this justifies us in procrastinating when face to face with a case of appendicitis. If we do, it is likely that we shall have ample opportunity of judging of the "merits of the case" in the post-mortem room. Until such time as we are able to acquire the gift of prophecy, the safest and wisest course is immediate operation. While fully admitting the increased dangers of operating during this stage, I believe that the risks of the operation under modern conditions have been exaggerated. The operation, however, *must* be limited both in time and extent. These patients are often already suffering from profound toxæmia and will not stand a prolonged operation, while extensive manipulations and handling of the intestines will increase the dose of toxins absorbed to a fatal degree. As Dr. Murphy well puts it, "the extent of the operation must be decided by the constitutional symptoms of sepsis, rather than by the extent or character of the pathological changes." When the intoxication is not severe the appendix may be removed; when the intoxication is profound simple incision and drainage must suffice. No flushing or sponging of the intestines is admissible. Dr. Murphy pithily sums up the method of operation as follows: "Get in quick, get out quicker!"

There is one fact which I think has been overlooked in discussing the question of operation in these cases—namely, that owing to the introduction of the Fowler position and continuous proctoclysis by the Murphy method, the immediate mortality of operation in bad cases has been enormously reduced. This, in my judgment, is one of the most important advances in abdominal surgery made during the past twenty years. Since employing this method I feel that I can operate with confidence in cases which without it would almost certainly have a fatal issue. Whereas formerly I expected to lose at least two out of every three cases of general suppurative peritonitis, now I am disappointed if I lose one in seven. My method of operating has not materially changed: the difference is largely due to the use of continuous proctoclysis.

I would also emphasise the importance of the choice of anæsthetic in these cases, for I regard it as little short of criminal—this is a strong statement, but I make it deliberately—to administer chloroform to these patients. Suffering, as they usually are, from profound toxæmia, the addition of such a powerful drug as chloroform is often just sufficient to turn the scale against recovery.

I fully admit, nevertheless, that the danger of the operation in the later stages of the disease is greater than if done early, but my reply to objections to operating during this period is, first, that the danger of operation is less than the danger of further delay; and, secondly, that operation during the later stages should never be necessary, as it should be performed as soon as the diagnosis is made.

My procedure in the past with regard to the treatment of acute appendicitis may be divided into three periods, and it is instructive to compare the respective mortality-rates. During the first period I never operated during the acute stage if I could possibly avoid it, and rarely unless there was evidence of an abscess; the mortality in this series of cases, covering a period of six years, is 16 per cent. During the following three years I attempted to judge each case on its merits; the mortality in this series is 13 per cent. During the last period, extending over nearly two years, I have operated upon every case as soon as possible, and there has been a striking improvement in the results; my cases have numbered 53, and of these 51 patients have recovered and 2 have died. General peritonitis was present in 14 of the 53, and when I say general peritonitis, I mean the presence of purulent fluid free in the peritoneal cavity and not a localised collection in the right iliac fossa. In some of the cases there was a local collection of pus, not surrounded by adhesions, in the neighbourhood of the appendix, but which had not at the time of operation become disseminated. These I do not include under the term "general peritonitis." Both the patients who died had general suppurative peritonitis. One patient had been ill for ten days before admission to hospital, and apparently had a local abscess which had burst into the general peritoneal cavity shortly before operation. One of the patients lived 6, and the other 16, days after the operation. In both instances their resistance seemed so lowered that they had no recuperative power. Of my last 42 consecutive cases all the patients have recovered.

During the period covered by these 53 cases there have been three errors in diagnosis—errors in diagnosis, but not errors as regards the necessity for operation—one in a case of pneumococcal peritonitis, and the other two in cases of pyosalpinx, one of which had ruptured just previous to operation. Errors such as these are no argument against the advisability of operation. Granted that if we operate in every case of supposed appendicitis we may on very rare occasions perform an unnecessary operation; we must recognise that this is also true of other acute abdominal diseases, as in some instances the symptoms may simulate perforation or other serious condition so closely that one dare not postpone exploration. In such cases the risk of an unnecessary operation may be less than the risk of delay. It would be instructive if we could know how many patients are lost through delay in operating. Unfortunately statistics to determine this question are not available; but if the truth were known, I am convinced that we should find that more patients are lost through delay than through precipitancy. In acute appendicitis the symptoms are often so deceptive, the signs of danger so slight, and the ultimate issue so uncertain, that clinical observation, the living pathology of the disease, and the results obtained by the surgery of to-day, all point to early operation as the treatment of choice.

Upper Wimpole-street, W.

SOME UNUSUAL EFFECTS OF PERFORATED GASTRIC ULCER.

BY WILLIAM P. S. BRANSON, M.D. CANTAB., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN, ROYAL FREE HOSPITAL;
AND
T. P. LEGG, M.S. LOND., F.R.C.S. ENG.,
SURGEON, ROYAL FREE HOSPITAL; ASSISTANT SURGEON, KING'S COLLEGE HOSPITAL.

THIS is the record of some perplexing remote consequences of a perforated gastric ulcer, and of the unexpected efficacy of an operation which gave little remedial promise at the time of its performance. Since the practical interest of the case turns largely upon the misleading fashion in which the patient originally presented his story, the latter will be given as it was received, rather than as it appeared after reconstruction in the light of fuller knowledge.

A man, aged 38 years, entered the Royal Free Hospital on June 13th, 1910, as a patient of Dr. H. Sainsbury (by whose courtesy the case is now given in its entirety), coming subsequently under the care of the writers during Dr. Sainsbury's absence on holiday. He complained that he had been incapacitated for 11 months by pain in the left loin and over the left lower ribs. This pain he described as

paroxysmal, sharp and stabbing at its onset, but fading gradually to a dull gnawing ache which never left him. The paroxysms, which varied in duration from 15 minutes to 1 hour, were not associated with any specific action, whether eating or breathing or exertion, and were liable to occur during sleep. He had been treated both in and out of hospitals with some temporary relief, but for three months past had been a complete invalid. His previous health history was good, with the exception of an attack of pleurisy four years previously.

The patient was a tall, anæmic man of average appetite, complaining somewhat of flatulence, but otherwise of nothing beyond his pain. He exhibited a pronounced lateral curvature of the spine, with the convexity to the right (see illustration). It was a bold single curve extending

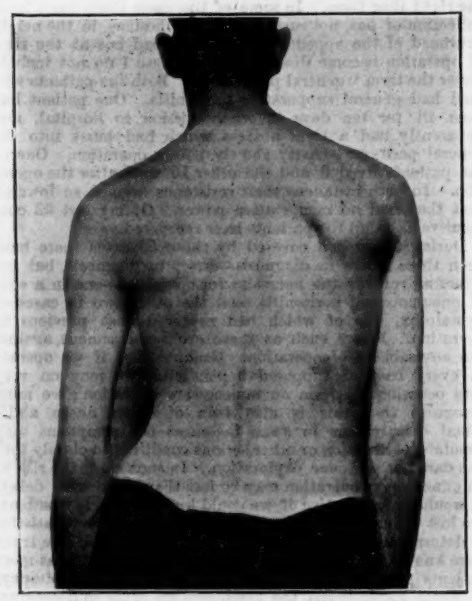


Illustration showing curvature of spine.

from the first dorsal spine above to the second lumbar spine below. He asserted confidently that the curve was but lately acquired and attributed it to the attitude of flexion towards the left which his pain had compelled him to assume for many months. His temperature was normal. His left rectus abdominis muscle was somewhat more rigid than the right, but physical examination gave no further help than this.

A month of rest in bed improved him a good deal, and he went to a convalescent home, returning, however, a month later much distressed by recurrent seizures of pain. Under renewed cross-examination as to the history of his illness he now gave the following additional information. Although his disability had been pronounced for 11 months only he admitted dating a decline in his health from the time of the pleurisy. Questioned as to the symptoms of this illness, he said that one day while at work as a stoker he was seized with a sudden and acute pain in the left side. The suddenness and severity of the pain may be gauged from the statement that it "made him drop his tools." He went to a hospital on the following day, was admitted, and was told that he was suffering from pleurisy. His chest was punctured and the pleurisy was pronounced to be "dry." He had suffered somewhat from indigestion since, but laid little stress upon it.

This revised version, it may be supposed, raised a suspicion that the pleurisy had in fact been a manifestation secondary to perforation of the stomach, for the lightning suddenness of the first serious symptom did not tally with the onset of a simple pleurisy. Further examination from this point of view revealed a definite tender resistance in the epigastrium near the ninth left costal cartilage. Moreover, a cyrtometer tracing of the base of the chest showed that there was no diminution in the capacity of the lower lobe of the left lung—evidence that the curvature was not to be explained by any past pulmonary disorder. It being now tolerably certain that, although gastric symptoms of note were conspicuously absent, the trouble had been gastric in origin, a cytological examination of the contents of the fasting stomach was carried out, and demonstrated the presence of pus in considerable quantity. In spite of this positive evidence it was hard for anyone who saw the gusto with which the patient attacked an ordinary meal to believe that a serious lesion was present in the stomach. Blood examination showed a moderate grade of secondary anæmia without leucocytosis. It was noted as a curious and recurrent feature of the illness that with each acute paroxysm of pain the left arm and hand, with the left side of the chest, became covered with sweat, the right side remaining perfectly dry. But the bearing of this was not appreciated at the time.

Surgical help was now sought, and after skiagraphy of the left renal region to exclude the presence of a calculus an exploratory operation was recommended to the patient, who agreed gladly to it, for he had been rendered very miserable by his pain. At the operation the tender epigastric swelling was found to be explained by a large area of dense fibrous adhesion by which the anterior wall of the stomach and the anterior belly wall were bound inseparably together, the cicatrix penetrating the belly wall to a considerable depth. The stomach was somewhat contracted, and exhibited a certain degree of hour-glass deformity at the site of its adhesion to the anterior parietes, while the posterior wall in practically its whole extent was immoveably fixed to the tissues behind it. The greater omentum contained numerous enlarged and hard lymphatic glands.

An effort was made to detach the stomach from the anterior wall of the belly, and a certain amount of the dense fibrous material uniting the two was cut away, but it was finally decided that complete separation was impossible because so large a part of the anterior wall of the stomach was attached to the parietes. Moreover, the fixity of the stomach behind, and the extensive area of adhesion in front, precluded the performance of gastro-enterostomy, so after removal of some of the enlarged glands for histological purposes the belly was closed without the effecting of anything remedial; or so it was thought at the time. The excised glands showed evidence of chronic inflammation only.

Contrary to expectation, the operation was a complete success. Five months after it the patient expressed himself entirely free from pain, and had gained over 3 st. in weight. He complained of occasional trouble with "wind," but was otherwise well, though still not robust in appearance.

In retrospect the true relations of the illness appear as follows. The first symptom of the series was the pain announcing perforation of a gastric ulcer. This produced the pleurisy from which the illness dated, and to judge by the extent and density of the adhesions about the stomach led also to a subdiaphragmatic abscess, the shrunken cavity of which, it may be guessed, is still in communication with the interior of the stomach. The pains which were the predominating feature of the malady in its later stages were neuralgic in character. It is clear from the description of them, and from the sympathetic phenomena with which they were associated, that they belonged to the category of neuralgias. How were they relieved by the limited operation which alone was practicable? It must be supposed that they were excited by the involvement of branches of the intercostal nerves in the cicatrix which bound the stomach to the anterior belly wall, and that in the effort to effect a separation here the damaged nerve-endings were divided from their stems.

The above case instances the help sometimes to be obtained from submitting to a minute rehearsal the events which have ushered in a chronic illness of obscure nature, for the history as originally given did not admit of a reasoned diagnosis. The more or less fortuitous cure suggests that the part played by the intercostal nerves in producing the chronic pains of gastric ulcer is worthy of more attention than it has received. It is not unlikely that the unexplained relief of abdominal pain occasionally derived from an inconclusive exploratory operation may be due to section of

peripheral nerves in the course of the incision, and conversely that the failure to obtain relief from gastro-enterostomy may at times depend upon the fact that the pain is not gastric in origin but neuralgic—that is to say, intercostal. If further observation should prove the relation established in this case to be one of any frequency, section of the incriminated nerve or nerves would serve as a ready means of relief in appropriate instances, or at least as a prelude worthy of trial before resort to gastro-enterostomy.

PROGRESS IN CANCER RESEARCH:

A NOTE ON WORK IN THE RESEARCH DEPARTMENT OF THE GLASGOW CANCER HOSPITAL.

BY CHARLES E. WALKER, M.SC. LIVERP., M.R.C.S. ENG., L.R.C.P. LOND.,
DIRECTOR OF THE DEPARTMENT.

THERE are so many lines along which cancer research is being conducted at the present time that a varied choice exists in initiating the work of a new laboratory. Research in this laboratory is being conducted along three principal lines: (1) the cytological investigation of malignant growths; (2) chemical investigations; and (3) experimental work with malignant growths occurring in animals.

1. In 1903 an account of investigations was published which claimed to show that among the cells of malignant growths forms of division occurred similar to those found in the reproductive cells previous to the production of mature gametes.[1] Since that time these observations have been confirmed and contradicted, and on the whole the point requires settling one way or the other. If the original observations prove correct, they throw considerable light upon some of the phenomena connected with cancer. Gametogenic cells—that is, cells which are destined to produce gametes—are out of somatic-coördination[2] and live as parasites at the expense of the organism in which they occur, without being necessary to its well-being. We know that in some cases an external stimulus will cause some of the cells of an organism to pass out of somatic-coördination and live in a parasitic manner upon it. These, and the gametogenic cells of certain plants, may actually destroy the somatic or body cells of the parent organism. There is much which suggests that if a group of cells passes out of somatic-coördination, similar phenomena to those usually found only in true gametogenic cells are likely to follow, besides the change to a parasitic mode of life. The most striking phenomenon in gametogenic cells is the reduction in the number of chromosomes to one half of that found in the normal somatic or body cells. It has been claimed that this does occur in cancer. It has also been stated that it does not occur, and also that it occurs in simple inflammatory tissue. One way of reducing to a minimum errors of observation which exist where only a few individual cells have been examined is to count the chromosomes in every dividing cell, where this is possible, in the various tissues involved in the investigation. The greater number of cells counted, the less the personal error will be. A curve representing the number of chromosomes in each of 400 cancer cells has already been published,[3] showing most striking maxima at the somatic and half the somatic numbers of chromosomes. Nothing of this kind has been published in any of the papers which deny the occurrence of gametogenic phenomena in cancer cells, or which claim that similar phenomena occur in inflammatory tissue. But, unfortunately, no similar counts have been published of the number of chromosomes in human or even in mammalian gametogenic cells, or in the cells of inflammatory tissue. During the past eight months—that is, since work was begun in this laboratory—the chromosomes in many hundreds of cells have been counted. These include cancer cells, human reproductive cells, various kinds of inflammatory tissue from the human subject, and inflammatory tissue artificially produced in animals. This work is practically complete and will be ready for publication in a few weeks. The number of cells counted appears to me to be amply sufficient to eliminate to a great extent the sources of error so obvious in many previous observations, and should show definitely whether the theory that cancer cells have passed out of somatic-coördination, and consequently behave to some extent like gametogenic cells, is or is not supported by facts in this direction. An investigation on cytological lines is also in progress which promises to throw considerable light on how far the transmissible tumours in mice may be directly compared with primary and secondary malignant growths in the human subject.

2. The bio-chemical work is, of course, to a considerable extent mixed up with the next section, but some is in view upon metabolism and upon nucleins and enzymes. Some experiments suggested by Professor Benjamin Moore's work upon the blood in cancer are also being done.

3. We are fortunate in possessing a highly malignant transmissible mouse tumour given to the Liverpool Cancer Research Laboratory by Professor Ehrlich in 1907. An attempt to transmit an epithelioma occurring in a goldfish proved unsuccessful, though 38 other goldfish were inoculated. We secured another goldfish with a tumour, but have not succeeded in this case either.

A series of experiments begun in the Liverpool Cancer Research Laboratory seems to suggest very strongly that it is possible by selection to increase or to diminish the malignancy of Professor Ehrlich's tumour at will in successive generations. The experiments are not yet concluded, but if the final results confirm what has happened hitherto, both the laborious experiments, which claim to have demonstrated a rhythm of growth-energy in mouse cancer,[4] and Gary N. Calkins's contradiction of these conclusions, based upon another similar series of observations,[5] will be to some extent explained. The experiments connected with the production of sera destructive to mouse cancer cells which were begun some years ago in the Liverpool Cancer Research Laboratory are being continued. In THE LANCET of Sept. 12th, 1908, the results of some of these experiments were described. Two sera were used, both being obtained from rats. In the case of one of these sera the rats were inoculated with the living cells of mouse cancer, and in the case of the other with the living cells of mouse testis. Both these sera produced curative results when injected into mice with well-established tumours, but the effect of the serum of the rats treated with mouse tumour cells was more satisfactory than of that produced by means of mouse testis cells. With the tumour serum 70 per cent. of the mice, all of which had large and well-established tumours, were cured. These experiments have been repeated twice with similar results, and in THE LANCET of April 9th, 1910, an account was published of effects *in vitro* of the two sera upon the living cells of mouse tumour, which confirmed the results obtained by injecting the sera into mice suffering from cancer. It had been known for some time that the cells of the transmissible mouse carcinomata would live and multiply in the rat for two or even three weeks, always, however, being eventually absorbed. It was upon this fact, as explained in THE LANCET of Sept. 12th, 1908, that my experiments were to a great extent founded, for their success depended upon establishing in a rat a reaction to the living cancer cells of the mouse. The evidence upon this point afforded by my experiments has been confirmed by Dr. Bashford, who showed that living mouse tumour cells were completely destroyed in a few hours when injected into rats which had previously been treated with mouse tumour cells, while at a corresponding period the cells were alive and multiplying in the bodies of rats that had not been previously treated.[6]

It has been quite impossible hitherto to apply these experimental results, so promising at first glance, to the human subject. Some attempts have been made to find out whether human testis cells would live in anthropoid apes for any length of time, but the difficulties encountered have hitherto proved insuperable, and nothing approaching to a

[1] Farmer, Moore, and Walker: Proceedings of the Royal Society, vol. lxxii., 1903.

[2] It is impossible to enter here upon a discussion of somatic-coördination as compared with physiological coördination. A full account is given in Essentials of Cytology, Constable, London, 1907.

[3] Farmer, Moore, and Walker: Proceedings of the Royal Society, B, vol. lxxvii., 1906.

[4] Bashford, Murray, and Bowen: Proceedings of the Royal Society, B, vol. lxxviii., 1906.

[5] Gary N. Calkins, Journal of Experimental Medicine, vol. x., No. 3, 1908.

[6] Bashford: Proceedings of the Royal Society, B, vol. lxxxii., 1910.

stage where the application of these methods to the human subject has been possible or justifiable. In this connexion I feel it right to call attention to this passage in the last (eighth) annual report of the Imperial Cancer Research Fund (p. 13, lines 24–30), July, 1910:—"Still more emphatically do we warn against applying to the human subject the methods which after long perseverance have enabled us to arrest the growth and even to cure animals of transplanted tumours that were well established, and also to render animals resistent to a secondary inoculation—i.e., to dissemination and to metastasis formation." Such a warning, issued officially by the Imperial Cancer Research Fund, must tend to prejudice the medical profession with regard to any attempts to apply to the human subject methods which have been found successful with other animals. Dr. Bashford may have weighty reasons for his warning, but in the circumstances of the case I consider that he should give them. He is head of a research supported by public subscriptions, but unless his reasons for what he has said are unquestionable, his warning must tend to retard rather than to advance the object for which the Imperial Cancer Research Fund was founded. Dr. Bashford does not state where the accounts of the experiments upon which he bases his claim to be able to cure animals are to be found. May I, in the interests of those occupied in cancer research, ask Dr. Bashford for references to these experiments?

Glasgow.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

TWO CASES OF EOSINURIA.

BY A. C. D. FIRTH, M.A., M.B., B.C. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,
MEDICAL REGISTRAR, WEST LONDON HOSPITAL.

FORTUNATELY for the peace of mind of nervous individuals, the large majority of colouring matters used in food do not cause any striking change in the colour of the urine. Lately, however, two instances have come under my notice where the urine was coloured by artificial dyes taken in the food, and both caused some anxiety, although unattended by any other unpleasant symptoms.

The first case was that of a healthy boy, aged 11 years, who was brought to me by his mother, who said that she was afraid he had inflammation of the kidneys, as he was passing red urine. The first specimen which had attracted attention had been thrown away, but the second was brought for my inspection. Examination of the boy revealed nothing abnormal, but on looking at the urine the pink colour and marked fluorescence at once caught the eye. The lad owned at once to eating a quantity of pink sweets on the preceding evening, and he procured a sample for my inspection. Both sweets and urine were submitted to examination, and the same colouring matter, eosin, was found in considerable quantities in both. The boy experienced no ill-effects and the colour disappeared from the urine in 48 hours. The pink sweets were a cheap variety of cachous costing 4*d.* a pound, and even for delicacies of this description of a startling colour.

For the details of the second case I am indebted to the subject himself. After partaking one afternoon of an American iced drink and two macaroons, all of pink hue, he was horrified the next morning to find "he was passing a fluid like red ink." To use his own words again, "it was fluorescent, green and pink in various lights." Having an inquiring mind, he submitted the specimen to a scientific chemist, who found the cause of the colour to be eosin. The chain of evidence here is not complete, but as the macaroons and iced drink were the only pink food taken during the day the inference remains that one of them was the cause of the eosinuria. In this case, also, no bodily harm resulted, and the colour quickly disappeared, but, as the narrator remarked, "the condition is certainly very alarming."

It seems from these two cases that the quantity of eosin necessary to cause definite colouration of the urine can be ingested without damage to the kidneys. In the first case the urine was carefully examined, both chemically and microscopically, and no trace of blood or albumin detected. I think that comparatively large quantities of eosin are required to produce a noticeable eosinuria, as the sweets in question were obtained in a district teeming with children, and owing to the low price and attractive hue are exceedingly popular with the rising generation. My patient confessed to consuming a quarter of a pound, and informed me that the boys often bought them.

Doubtless many of these children have had slight eosinuria, but reasons could be given to account for the condition passing unnoticed when the circumstances under which the children live are considered.

NOTE ON A RARE CASE OF CONGENITAL UMBILICAL HERNIA.

BY JOHN P. MITCHELL, M.B., CH.B. ABERD.,
RESIDENT HOUSE PHYSICIAN, DREADNOUGHT HOSPITAL, GREENWICH; LATE RESIDENT MEDICAL OFFICER, ROYAL WATERLOO HOSPITAL, LONDON.

A VERY interesting case of this exceedingly rare condition was sent to the Royal Waterloo Hospital for Children and Women early in January by Dr. J. I. P. Wilson, then resident physician at the City of London Lying-in Hospital. When admitted the child was but six hours old, was well nourished, and weighed 8 lb. On examination the thoracic organs were found to be normal, but the abdomen presented rather an extraordinary condition. It was the usual size, soft and palpable, but was everywhere resonant, no liver dulness being definable. Projected into the very much attenuated umbilical cord was a body which in size and shape resembled a cocoanut; it was of a deep bluish-red colour, the surface smooth and even, the consistence firm and resilient. There was no gurgling on pressure, and it was not reducible. At its attachment the base was 3 inches in diameter, circular, and surrounded by an area of very pink, hard and thick, but healthy skin. The umbilical vessels were situated on the under surface of the hernia.

A very hasty preparation was made and within two hours of admission an anæsthetic—chloroform and ether equal parts—was given and a radical cure performed by Mr. Ivor Back, with whose permission I report the case. An incision was made on the superior surface of the hernia and a director was inserted between the parietal peritoneum and the contents of the sac. Adhesions which had formed were easily overcome, and when the sac was separated off the whole of the left lobe and the greater portion of the right lobe of the liver were found prolapsed into the cord. It was not easy to replace it in the abdomen, but the round ligament was found to be holding it in its position; it was therefore ligatured and cut and the liver fell back into position. Three deep transverse silkworm-gut sutures were passed through the recti muscles, which were firmly approximated, the sutures being buried. The umbilical vessels being ligatured the thickened firm edges of the navel were trimmed and several superficial sutures inserted, thus obliterating the circular aperture and making a vertical wound. The superficial sutures cut through the skin, but the deep recti sutures held firmly. Thus with the aid of adhesive strapping, which kept the external margins of the wound together, healing took place by granulation and a perfect cicatrix was obtained.

The child has been discharged and there is thus far no evidence of weakness in the abdominal wall.

KING'S COLLEGE HOSPITAL REMOVAL FUND.—A ladies' dinner in aid of the King's College Hospital Removal Fund was held at the Connaught Rooms on May 4th under the presidency of Lord Selborne. The guests, who numbered about 400, included the Maharajah and Maharani of Indore, Lord Brassey, the Hon. W. F. D. Smith, Lady Esther Smith, Sir David and Lady Ferrier, Dr. H. A. Miers (the Principal of London University), and Sir Watson Cheyne. Lord Selborne, in proposing the toast of the New King's College Hospital, said that, judged by the test of utility to a vast and poor population, a finer site for the new hospital than that in South London could not have been chosen. The hospital would contain 600 beds. The amount still required for the building fund was £150,000. Subscriptions to the amount of £59,000 were announced during the evening.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Salicylates in Rheumatic Affections.—Malignant Tumours of the Naso-pharynx.

A MEETING of this society was held on May 8th, Mr. CHARTERS J. SYMONDS being in the chair.

Dr. A. F. VOELCKER read a paper entitled "The Limitations to the Successful Employment of Salicylates in Rheumatic Affections." He said that the treatment of rheumatism had been so intimately associated with the employment of the salicylates that it had become a habit to treat all rheumatic affections with the salicylates. Certain rheumatic affections responded admirably to the salicylates, but there were also quite a number of undoubtedly rheumatic manifestations in which the salicylates had in his experience proved useless. The most striking benefit of the salicylates was shown in their influence on joint pains, though there were some cases which, though refractory to salicylate of soda, responded to aspirin. The persistence of pain after adequate administration of salicylates should always cause them to look out for the possibility of an arthritis being gonococcal or septic in nature or to the pain being due to an anterior poliomyelitis. The pain of acute rheumatic arthritis ought to yield within 24 hours to the administration of 10 grains of salicylate of soda with 20 grains of bicarbonate of soda given every two hours for three doses and then every four hours. Pains about fibrous structures after an acute arthritis were often intractable to salicylates but yielded to local applications of oil of wintergreen or to iodide of potassium internally. The pain of pleurisy and of pericarditis was uninfluenced by the salicylates. Joint effusions when aggravated by movements were intractable to salicylates even when they contained the diplococcus rheumaticus. The pyrexia of acute polyarticular rheumatism was generally controlled within three days, but in the rheumatic state there was often a pyrexia ranging through two degrees which continued even for weeks and was unaccompanied by any obvious manifestation of rheumatism. Such pyrexia was often uninfluenced by the salicylates, though it might yield to salol or aspirin. The employment of the salicylates in rheumatic hyperpyrexia was waste of valuable time. The cutaneous manifestations of rheumatism were uninfluenced by the salicylates. Neither the various forms of erythema, purpura, nor erythema nodosum had appeared to Dr. Voelcker to be influenced by the salicylates, though the manifestations had occurred while patients were actually taking the drug. In the treatment of erythema nodosum applications of oil of wintergreen were beneficial. The subcutaneous nodules described by Barlow and Warner were undoubtedly rheumatic in nature, but they were quite uninfluenced by the administration of the salicylates. He had failed to find any successful treatment for the nodules. The similarity of their structure to that of the inflamed valves of the heart in rheumatism, as pointed out by Cheadle, to Dr. Voelcker was a powerful argument against the utility of the employment of salicylates in endo- or pericarditis. The danger of upsetting the stomach with the irritant salicylates must be borne in mind in the treatment of all heart affections, as must the risk of acidosis. In the treatment of chorea the salicylates had proved of no use in his experience. The object of his paper was not to belittle the good effects which salicylates yielded, but to point out they they were not specifics for any and every affection termed rheumatic.—Dr. F. DE HAVILLAND HALL said that in cases of chorea they were all agreed that not much was to be expected from the use of the salicylates, but if there was a rise in temperature in chorea then he thought the salicylates might be usefully employed, even though there were no joint pains.—Dr. J. WALTER CARR pointed out that disappointing results were to be expected in regard to the cardiac lesions of acute rheumatism when treated by salicylates. How was it to be expected that good effects could follow any drug used in rheumatism when it was considered how impossible it was to rest the heart? The incessant movement of the heart must operate very powerfully in preventing any drug from securing satisfactory results in acute rheumatism.—Dr. R. PARAMORE said that it would be better if people were contented with smaller doses of the salicylates than those generally employed.—Dr. W. EWART recommended that in addition to the salicylates iodide of potassium should be included as a part of the treatment.—Dr. J. PORTER PARKINSON referred to the opinion that because in rheumatic fever the salicylates relieved the fever and the pain in the joints the result was that in hospitals the patients left too soon, and in that manner the actual number of cases of endocarditis following rheumatic fever was increased.—Dr. VOELCKER replied.

Mr. WILFRED TROTTER read a paper on the Symptoms of Malignant Tumours of the Naso-pharynx. He said that he had operated on some six cases of infiltrating tumours of the naso-pharynx without marked projection, and all the cases presented remarkable similarities. In each case the tumour was an endothelioma, and was situated in the lateral wall. The tumour appeared to start in the substance of the pharyngeal wall. Consequently it early involved the Eustachian tube, causing deafness; the levator palati, causing defective mobility of the soft palate on the same side; and the inferior maxillary nerve, causing neuralgic pain in the ear, the side of the head, the jaw, and the tongue. Further progress of the disease led to closure of the jaws through involvement of the internal pterygoid. The strictly anatomical distribution of the symptoms was always a striking feature, and it should be noted that owing to the nearness to one another of the structures involved symptoms so diverse as deafness, trigeminal neuralgia, and an affection of the palate might be produced by a lesion no larger than a walnut. When the significance of the combination of deafness, neuralgia, and an affection of the palate was understood there could be little danger of those cases escaping notice. It might be laid down absolutely that no single lesion except one in the lateral wall of the naso-pharynx could produce those three symptoms in association. Once suspicion was aroused digital examination of the naso-pharynx usually settled the diagnosis at once. It must be remembered, however, that no pronounced pharyngeal projection might be present, but merely a hard nodular infiltration of the tissues about the Eustachian tube. Sometimes a sufficiently deliberate examination to make the diagnosis certain could not be carried out without the use of a general anæsthetic. From the diagnostic standpoint these cases seemed to be of especial interest to the otologist and the neurologist. The need for careful investigation of the naso-pharynx in cases of Eustachian deafness was more than ever obvious in view of these conditions and the fact that they might reach a very considerable development without causing any striking nasal obstruction. Again, the association of chronic deafness with persistent neuralgic pain should always give rise to the suspicion of some serious underlying condition. It was especially, however, the neurological aspects of those cases which seemed to him of interest, and he would lay particular stress upon the importance of very carefully looking for deafness or affection of the palate in any case which was ostensibly one of trigeminal neuralgia beginning in the third division, specially in young adult males. They had seen even that occasionally pain of that type might begin in the second division.

OPHTHALMOLOGICAL SOCIETY.

Hereditary Nystagmus.—Small Flap Sclerotomy in Glaucoma.—Exhibition of Cases and Specimens.

A MEETING of this society was held on May 4th, Mr. GUSTAVUS HARTRIDGE, Vice-President, being in the chair.

Mr. E. NETTLESHIP read a paper entitled "New Cases of Hereditary Nystagmus." He presented two extensive new pedigrees of hereditary nystagmus, one, containing 27 cases, by Dr. G. A. Auden of Birmingham. Two other small new pedigrees and nine published ones were brought in for purposes of comparison and classification. Examination of the whole 13 pedigrees showed that in some of them the nystagmus was associated with movements of the head, whilst in other pedigrees no head movements had occurred. Further analysis disclosed the possibly important fact that in the pedigrees showing both eye- and head-movements the abnormality affected both sexes and could be transmitted by

either male or female parent, whereas in the genealogies containing nystagmus alone, with no head-movements, the abnormality was strictly limited to males and transmitted only by mothers (themselves unaffected)—the same male-limited inheritance that is seen in colour-blindness, hæmophilia, &c. Two isolated exceptions to these findings were recorded, but the testimony for both of them was remote, indirect, and regarded as inconclusive. The rapidity and amplitude of the nystagmic movements varied greatly in the different members of both the sub-groups, but the direction was horizontal in all. There was evidence that in some cases both nystagmus and head movements had diminished with age. In almost all cases in both sub-groups the nystagmists had defective sight and marked ametropia, usually hypermetropic astigmatism, and in many of them the blue irides and relatively light choroids pointed, in Mr. Nettleship's opinion, to some degree of ocular albinism. There was no evidence of disease of the nervous system in the affected stocks. Parental consanguinity was noted as absent in the majority and not noted as present in any.—Professor BATESON (Cambridge) regarded the paper as the most important work which Mr. Nettleship had yet done on the subject of hereditary or family diseases. The suggestion which it implied was that one could classify cases into groups: those in which there were head-movements and those in which that affection did not exist. And it was reasonable to hope that by more attention to clinical detail it would be possible to purify the cases and get out the aberrant cases and leave a clear result. In the pedigrees exhibited there was something like Mendelian descent, though there were some hitches. He pointed out that the difficulty in forming an idea of the descent of a sex-limited affection was that it was not accurately known how sex descended, so that the argument was a circular one. If sex did descend in the way in which speculation suggested a scheme could be drawn up of a sex-limited disease. Biologists were looking to the medical profession with constant curiosity for the production of cases in which some affection was limited to females in the same way as there were known to be diseases limited to men. He did not, of course, refer to peculiar women's diseases.

Mr. H. HERBERT read an interim report on the Small-flap Sclerotomy. He reported upon a series of 54 small-flap operations for glaucoma, primary or secondary, including 14 mentioned a year ago. Thirteen of the operations had been performed with Bishop Harman's twin scissors. There had been some failures, partial or complete, in blind or nearly blind eyes only. The wound showed a tendency to heal up firmly, possibly owing to an excess of albumin in the aqueous. A suggestion was made of partial sclerotomy after failure in any such case. In three other eyes the filtration, for a time at least, was insufficient to relieve the tension fully, though enough to relieve pain. In one of these cases the deficiency in filtration was probably due to a too shelving incision, entering the anterior chamber at some distance from the angle. The primary incision, at the surface of the sclerotic, need never be more than 2½ mm. from the corneal margin, provided the incision were not made too shelving.—Mr. J. H. TOMLINSON reminded members that he had shown a case that evening in whom the operation just described was performed by Mr. Herbert, with the knife, last June. Tension was still satisfactory.—Mr. NETTLESHIP asked whether there was a family history of glaucoma, as there was reason to think that when it occurred in more than one generation it came on at an earlier age than in the generation preceding.—Mr. E. TREACHER COLLINS said he had performed the operation 40 times since Mr. Herbert's first description, with the knife, and in the large majority there was a satisfactory reduction of tension. But there had been some failures. In two there was prolapse of iris, and in some there was the formation of irido-dialysis in connexion with the primary incision, and in some there was adhesion of the iris to the seat of the wound.—Mr. M. S. MAYOU said that he had performed the operation 15 times, and so far as he knew the failures had been two. In one of them the tension increased to + 3; it was chronic glaucoma, and iridectomy failed to relieve the tension.—Mr. W. G. LAWS (Nottingham) said he had done the operation on 45 eyes, and it had not failed to relieve the tension permanently and satisfactorily, a strikingly favourable statement which he could not make about any other glaucoma operation which he had tried. He had also used it in five cases of buphthalmos, and in all of them it had proved satisfactory, though in one, an old-standing case, some intra-ocular hæmorrhage occurred, but not enough to destroy the eye. It was soft finally.—Mr. N. C. RIDLEY (Leicester) said he had done the operation on 22 occasions, and with two exceptions there was considerable improvement.—Mr. HERBERT, in replying, invited the reporting of failures following the operation, so that the technique could be perfected as far as possible.

The following card specimens were shown:—

Mr. TOMLINSON: A Model to show a curious colour effect due to simultaneous contrast.

Mr. DONALD: A family with Discoid Cataracts.

Mr. A. S. WORTON: A case of Albuminuric Retinitis; Atypical Macula in the other eye.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

The Faucial Tonsils and their Enucleation.—The Diagnosis of Urinary Calculi by X Rays.—Personal Experiences with Salvarsan.

A MEETING of this society was held on May 3rd, Dr. BYROM BRAMWELL, the President, being in the chair.

Dr. J. S. FRASER described in detail the Anatomy and Histology of the Faucial Tonsils, and cited the observation of Retterer that they are not vestigial structures and that they reach their greatest complexity in man, those of the human embryo having little lymphoid tissue. He said that it was generally admitted that lymphocytes were formed in the germinal centres and that they passed outwards and forced themselves, or were forced, between the epithelial cells lining the crypts. The tonsils had been regarded as (1) lymph glands draining the nasal mucosa; (2) organs for elimination; (3) glands which furnish an internal secretion; (4) as producing a substance which aids salivary digestion; (5) as one of the sources of lymphocytes; (6) as bactericidal structures; and (7) as organs of early immunisation. According to this last theory bacteria multiplied in the crypts and their toxins were absorbed in small quantities into the system. Several observers had investigated the bacteriology of the tonsil crypts and had found a large and varied assortment of micro-organisms. Lance did not consider simple hypertrophy of the tonsils to be pathological, but regarded it merely as an expression of the power of resistance. Dr. Fraser then enumerated the diseases of the tonsil as follows: 1. Simple chronic hypertrophy, if this was to be regarded as a disease. 2. Recurring attacks of tonsillitis—follicular or parenchymatous. Many diseases had been attributed to infection through the tonsil—appendicitis, acute rheumatism and rheumatoid arthritis, pleurisy, pericarditis, parotitis, nephritis, osteomyelitis, pyæmia, septicæmia, &c. 3. Peritonsillitis and peritonsillar abscess or quinsy. This condition frequently followed acute tonsillitis. He stated that peritonsillar abscess was associated with obstruction of the supra-tonsillar fossa. From what had already been said in regard to the anatomy of the peritonsillar space it would be seen why the pus did not, as a rule, track downwards but pointed through the anterior surface of the soft palate; frequent attacks of quinsy led to adhesions in the peritonsillar space and rendered the operation of enucleation somewhat difficult, but the guillotine was quite useless in these cases. 4. Tubercular disease of the tonsil. The tendency now was to look on the tonsil as the original seat of infection in cases of tubercular cervical adenitis. Microscopical examination had shown that in such cases a very large percentage of tonsils were tubercular; this percentage would probably be greatly increased if inoculation experiments were carried out in all cases. Mr. Scott Carmichael suggested that the source of the infection was tubercular milk which lodged in the crypts. In a recent paper Leuwer had shown that during swallowing the food did not pass along the middle line, but down the lateral aspects of the fauces and pharynx, and from the clinical standpoint one was accustomed to find the fish-bones tend to stick in the tonsils or in the pyriform sinus and not in the middle line of the pharynx. 5. Such conditions as diphtheria, syphilis, Vincent's angina, keratosis pharyngis, calculus, and malignant disease did not come within the scope of Dr. Fraser's paper.

Indications for operation on the tonsil were: 1. In cases of chronic hypertrophy in which the tonsils were pedunculated and gave rise to symptoms the guillotine operation was indicated. 2. In cases of recurring attacks of tonsillitis and peritonsillitis where the tonsils were submerged; in cases of tubercular infection, and possibly in early cases of malignant disease (sarcoma) enucleation should be carried out. Contra-indications, Dr. Fraser said, were acute inflammatory conditions and bleeding diseases. Further, it was advisable not to operate during menstruation, and better to avoid, if possible, interfering with the tonsils of trained singers. In cases where the tonsils were slightly enlarged but no symptoms were present it was better not to operate. In the treatment of diseases of the tonsils Dr. Fraser mentioned such measures as gargles and paints; the washing out of the crypts with various antiseptics; and breaking down the crypts and cauterisation of these involutions. The guillotine operation, he said, had certain modifications, the best known being the combination of the guillotine and volsellum recently praised by StClair Thomson. Opinions varied as to the percentage of tonsils which were completely removed by the guillotine. Whillis and Pylius maintained that they could enucleate 42 per cent. of tonsils by this method, whereas Hett, after examining a large number of tonsils removed with the guillotine at several of the large London hospitals, came to the conclusion that only 2 per cent. had been completely removed. Various cutting forceps had been devised for dealing piecemeal with the tonsils. The volsellum and knife were certainly far more efficient than any of the above methods, but were inferior to enucleation, because the latter was based on anatomical study of the relations of the tonsil capsule. In America enucleation was performed by various methods—cautery dissection, cold knife dissection, knife dissection followed by the snare, and scissor dissection. The method Dr. Fraser always used was that of scissor dissection, aided in some cases by the use of the finger as a separator. He then gave a lantern demonstration illustrating the anatomy of the tonsils and some disease conditions—also the method of enucleating the tonsils. In the after-treatment the patient should be kept in bed in hospital or at home for at least one day; he should frequently use a mouth-wash, such as phenol sodique or boric lotion. Children usually preferred to suck a formalin lozenge. The cavity left by the operation soon filled with blood clot, but this came away on the second day and the raw surface became covered by a greyish membrane, which must not be mistaken for diphtheria. Dysphagia after enucleation lasted longer than after tonsillotomy—about four or five days in Dr. Fraser's experience. Thickened soups and milk puddings were most easily dealt with, and an inhalation of friar's balsam often relieved the sore-throat. Patients on whom the operation had been performed told him that they found no subsequent inconvenience in regard to talking and swallowing. Among the difficulties and dangers Dr. Fraser mentioned: 1. Friability of the tonsil. In some cases the volsellum tore out and a fresh grip had to be taken: it was essential to get a good hold of the tonsil before commencing. 2. Adhesions due to former attacks of quinsy. In many of these cases the tonsil could not be pulled inwards and the dissection must be made by the scissors alone, aided by a blunt hook to retract the anterior pillar. 3. Trismus. A short time ago Dr. Fraser operated on a patient who was unable to open his mouth more than half an inch. Needless to say, the operation was not easy. 4. Interference with respiration due to hæmorrhage and to the tongue falling back in cases in which general anæsthesia was employed. 5. Cocaine poisoning. When local anæsthesia was employed the patients occasionally complained of breathlessness, faintness, and palpitation. He had met with this twice in 80 cases. 6. Primary hæmorrhage was most troublesome under general anæsthesia. 7. Harris and Packhard had recorded deaths from the condition known as status lymphaticus. 8. Reactionary hæmorrhage was most marked in cases in which local anæsthesia (not adrenalin) had been used. The bleeding usually came on about half to one hour after the operation. Dr. Fraser had had two severe cases out of 80 under local anæsthesia. Secondary hæmorrhage might also occur, especially in cases in which the cautery was used. In regard to the treatment of hæmorrhage, the first thing was to apply pressure to the bleeding surface by means of a small sponge or gauze pad wrung out of hydrogen peroxide solution and held in a long sponge holder. The patient should sit up if possible. If the bleeding recurred, turpentine should be used in place of the peroxide. Adrenalin he had found useless. If these measures failed, an attempt should be made to catch the bleeding vessel, the anterior pillar being retracted by a blunt hook. The artery forceps might be left *in situ*, or an attempt might be made to apply a ligature; this was by no means an easy proceeding. Other methods of arresting hæmorrhage were: the use of a tonsil compressor, suture of the two pillars over a pad of gauze, and ligature of the external carotid. Sepsis might take various forms, such as diphtheria, cervical adenitis or cellulitis, purulent otitis media and mastoiditis, nephritis, septic rashes, articular rheumatism, chorea and endocarditis, phlebitis, septicæmia, &c. In an experience of over 100 cases Dr. Fraser had not so far met with any of these conditions. It must be remembered that all these septic conditions, and even hæmorrhage, might follow tonsillar infections quite apart from operation; for instance, Newcombe had collected 41 cases of hæmorrhage following tonsillar suppurations in which no operation had been performed. Dr. Fraser tendered thanks to Dr. Logan Turner for the many opportunities afforded him of removing the tonsils by enucleation, and also to the Royal College of Physicians and the Carnegie Trust for the means of doing the microscopical work.—Dr. A. LOGAN TURNER said that the small submerged type of tonsil was the most dangerous one from the clinical point of view. He urged the use of the guillotine for enlarged tonsils in the case of children. His own experience proved to him that the tonsils were seldom the seat of tuberculous infection, though 95 per cent. of cases with adenoids showed the presence of enlarged tonsils. On the other hand, in the adult the tonsil was removed because of recurrent attacks of quinsy or because of infection of the crypts, and here he thought that enucleation was the better operation. He employed novocaine and adrenalin as local anæsthetics and found that there was seldom any hæmorrhage if the whole tonsil had been removed, but if part were left bleeding might be severe. For the after pain in enucleation the insufflation of powdered orthoform with hot fomentations round the neck proved useful.—Dr. ELLIS, Mr. W. G. PORTER, Mr. J. D. LITHGOW, Mr. J. W. STRUTHERS, and Mr. J. W. DOWDEN took part in the discussion.

Dr. EDMUND F. T. PRICE gave a lantern demonstration on the Diagnosis of Urinary Calculi by Means of the X Rays. He had photographed 143 cases of suspected urinary calculi; of these 102 proved negative. Five of the latter were the subject of recurrent attacks of pain with persistent hæmaturia; one was due to hæmophilia, one to malignant disease of the kidney, one had cerebral hæmorrhage and therefore probably renal hæmorrhage, and in another there was a simple papilloma of the renal pelvis, thus showing that even a negative X ray photograph may give useful information. In 23 cases operated on no stone was found in two cases. He laid down the following propositions: 1. That in a certain proportion of cases of suspected urinary calculus it was possible, with good technique, to make an absolute diagnosis, positive or negative, by means of the X rays. 2. That it was always necessary to make a complete examination of both urinary tracts; that in the case of *ureteric* calculus especially an examination should be made on the morning of the operation; and that failure to recognise the presence of a *renal* calculus by mere palpation of the kidney was not sufficient proof of the fallacy in the X ray plate. 3. That in a certain proportion of cases it was difficult or impossible to give an absolute positive or negative diagnosis owing to the presence of other conditions which cast shadows closely resembling those of urinary calculi. These conditions were phleboliths, calcareous glands, and abnormalities connected with the appendix.

Mr. DOWDEN made a communication on Experiences in his Practice in the Use of Salvarsan, "606." He said that during the past year 586 cases of venereal disease had been treated in the lock wards of the Royal Infirmary, and of these 217 suffered from syphilis. During the past four months some 40 cases had been treated with salvarsan, and the dose usually administered was 0·6 gramme, or roughly nine grains of the drug, given intravenously. Twice it was administered intra-muscularly, but this method was discontinued because of the unpleasant local effects. The preparation before injection was the same as for a general

anæsthetic. The bend of the elbow was prepared by ether and tincture of iodine, and after the application of a webbing bandage high on the upper arm the median basilic vein was opened. The ordinary transfusion apparatus was employed. The salvarsan solution should be clear, yellow, and if cloudy ought not to be used until by the addition of a drop or two of 15 per cent. solution of sodium hydrate it had been rendered clear. Having introduced the needle into the vein normal saline was allowed to run into the vein until all was clear, then the salvarsan solution, and finally all was washed into the circulation with more saline fluid. Leakage of the drug into the tissues must be carefully avoided, as it acted most deleteriously on them. If the vein were small it had to be exposed under local anæsthesia and the cannula directly inserted into the orifice. After transfusion had been carried out, the vein above and below was tied and a mattress suture of horsehair inserted as the edges tended to become inverted. In a couple of hours afterwards there was a reaction as a rule, the temperature rose to 99° to 103° F. Nausea or vomiting might occur. Women exhibited less reaction than men did. All reaction was gone, however, within 24 hours. As regarded syphilitic lesions, definite changes might be seen within 24 hours mainly of a hyperæmic nature. The primary sore looked healthier and bled freely. Secondary lesions of the skin gradually faded after initial exacerbation, but in papular rashes there was a tendency for a pigmented spot to mark the site of the lesion. In one rupial case the reaction of the drug was very slow, and at the end of a week mercurial inunction was employed and improvement rapidly took place. Condylomata cleared up, not, however, more rapidly than happened with inunction and local attention; hair ceased to fall out in from one to two weeks. The lesions which reacted most promptly were secondary conditions about the throat, mouth, and tongue, and especially those about the soft palate, pharynx, and tonsils, in which there was extensive and rapid loss of tissue. In the case of late secondaries or early tertiaries remarkable results were seen, especially where the disease had resisted all other forms of treatment—e.g., multiple gummata of the skin, ulcerations of the palate and face of a lupoid type, and Mr. Dowden narrated a typical case. As regarded the most troublesome condition, old-standing leukoplakia of the tongue, salvarsan had practically no effect, nor could it be expected to restore scar tissue to the normal. With regard to general effects, all the patients expressed themselves as being remarkably improved in health. They usually put on weight. He had found that intramuscular injection caused intense pain with persistent after-stiffness. In another case a large swelling appeared which later ruptured. No effect was produced on gonorrhœa. In one case of scirrhus of the breast the drug influenced the disease in no way. Venereal warts were not affected by the drug, showing that some other variety of an infective nature produced them, as hypertrophic syphilitic developments, such as condylomata, reacted and disappeared. Mercury was always given along with "606" because a cure with salvarsan was as yet not quite certain. Although many writers stated that two injections of salvarsan at an interval of from seven to ten days was sufficient to cure the disease, it was wiser perhaps to be on the safe side and continue the mercury. His general impression with regard to salvarsan was that we had the most potent and rapidly acting drug existent for the treatment of syphilis, but as to its ultimate curative effects time alone would show.—Dr. LOGAN TURNER stated that the drug in his hands had had no influence on cases of lupus of the nose and pharynx.—Dr. THOMAS J. THYNE, Dr. D. CHALMERS WATSON, and the PRESIDENT, as well as Mr. HENRY WADE, Mr. D. P. D. WILKIE, and Mr. A. A. SCOT SKIRVING took part in the discussion.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Acute Pancreatitis followed by Cyst Formation.—Early Operation in Sacro-iliac Disease.—Acute Unilateral Pyelonephritis.

A MEETING of this section was held on April 21st, Mr. R. H. WOODS P.R.C.S.I., the President, being in the chair.

Mr. R. A. STONEY reported a case of Acute Pancreatitis followed by Formation of Cyst in a young married woman who on admission showed symptoms of biliary colic with slight jaundice and a moderate rise of temperature. At the operation the gall-bladder and bile ducts appeared normal, but numerous spots of fat necrosis were found, and the pancreas was generally enlarged and hard. A cholecystostomy was done. At the end of a week several very small irregular stones escaped. After this improvement was rapid, except for a severe attack of vomiting followed by tetany. About six weeks after the operation a swelling was first noticed in the upper left quadrant of the abdomen, and this steadily increased to the size of a football. The patient was apparently in good health; the cholecystostomy opening was almost closed, the urine and fæces were both normal, and there was no elevation of the temperature. A diagnosis of pancreatic cyst was made, and at the operation a large, tense fluid tumour was found presenting above the lesser curvature of the stomach. The anterior wall of the cyst was formed wholly or in part by the lesser omentum. About two quarts of thin, brown fluid were evacuated, the edges of the incision in the cyst wall were stitched to the abdominal wall, and the cyst drained. The discharge rapidly lessened, and the patient left hospital cured in less than a month. The fluid when examined was found to contain trypsin, amylopsin, and steapsine, and caused some erosion of the skin around the drainage opening. The patient has remained in perfect health since the last operation, which is now more than a year ago.—Mr. H. STOKES, the PRESIDENT, Mr. WHEELER, and Mr. W. PEARSON discussed the case.—Mr. STONEY, in reply to questions, said that the general opinion of Cammidge's reaction was that it was practically useless, and only in a very small proportion of cases gave any definite information. It was quite evident that the patient was suffering from acute pancreatitis, but not of too severe a type, so the reason for opening the gall-bladder was that by doing so the inflammation might subside, and the gland return to normal. There were stones which were overlooked owing to their small size. As to immediate operation, the patient was admitted in the middle of the night. As the temperature was only slightly raised, it was not thought there was any urgent necessity for any operation. When seen in the morning there was marked jaundice with pain, which suggested a case of biliary colic. The patient did not look as if she was suffering from anything like perforation. That the tumour might be a subphrenic abscess never occurred to him, because the large size, the normal temperature, and the absence of septic symptoms made him inclined to think it either a true or a pseudo-cyst in the lesser sac of the peritoneum.

Mr. W. I. DE C. WHEELER read a paper, illustrating it with lantern slides, on Sacro-iliac Disease, and referred to two recent cases. He emphasised the fact that the text-book signs and symptoms did not exist in the disease until there was advanced destruction of the joint, at which time surgery could not accomplish much. Early diagnosis could be made if sacro-iliac disease were more often looked for in patients suffering from vague pains in the sacro-gluteal region, especially when the pain was transmitted down the sciatic nerve as far as the knee. There was always discomfort about the joint in early disease which manifested itself, *inter alia*, by the unwillingness of the patient to change his position when lying in bed. An X ray photograph gave most valuable information and showed a focus in the sacrum or ilium at a very early stage. Occasionally the symptoms of sciatica and lumbago came on very acutely with a sharp rise of temperature in commencing disease of the joint. Mr. Wheeler remarked on the paucity of literature on the subject, especially in connexion with the operative surgery and applied anatomy of the joint. He recommended an incision carried below the crest of the ilium, the centre of which should correspond to the junction of the posterior third with the anterior two-thirds of the crest. The incision was an admirable one, lying between two blood supplies. The bone was exposed midway between the sciatic notch and the crest of the ilium, and was there drilled or trephined to reach a focus in the upper and anterior portion of the joint. An extension of the bone opening in a downward and slightly forward direction exposed the anterior part of the joint in its entire extent, and if the bone was gouged away towards the posterior spine the back of the joint was quite accessible. Mr. Wheeler deprecated late operations after abscess and sinus formation, and in any event the posterior route for

reaching the joint was surgically and anatomically unsound. In one case in which Mr. Wheeler's operation was performed a focus was discovered in the joint early by an X ray photograph. Portion of the iliac bone was removed in the manner stated and half a drachm of pus evacuated. Six months afterwards the man had gained in weight, was apparently quite well, and suffering from no pain or discomfort.—Mr. L. G. GUNN said that the difficulty was that the disease was not confined to one spot, as there was often spinal and hip-joint disease as well.—Mr. A. J. MCA. BLAYNEY said that diagnosis by X rays would be difficult where the disease was confined to the synovial membrane, or where there was only a very small focus of disease present. He would like to know the cause of the elevation of temperature because tubercular processes did not cause such elevation unless there was a secondary infection.—Mr. W. PEARSON said that Mr. Wheeler's method of exposure was not to be recommended in primary synovial forms of the disease, which, unfortunately, could not be diagnosed by X rays. Instead of making a transverse curved incision an oblique incision downwards and forwards parallel to the upper border of the gluteus maximus, just the same as Kocher's incision for excision of the hip, but placed at a higher level, might do less anatomical damage, and one could split the fibres of the gluteus medius through this incision. If the focus appeared at a lower level one should place the drill somewhat lower.—Mr. WHEELER, replying, said the synovial membrane in this joint was a very primitive structure, and there was only a very small synovial cavity, so in a large percentage of cases the disease would be found in the bone. But if the disease was confined to the synovial cavity there would be very few symptoms till the bone was attacked. Although sciatica was common, it was not present in every case. In tuberculous lesions one did not get any elevation of temperature. He had not got a bacteriological examination of the pus. The possibility of the infection being pneumococcal had occurred to him.

Mr. SETON S. PRINGLE dealt at some length with the etiology of Acute Unilateral Pyelo-Nephritis, and expressed the belief that the infection reached the kidney sometimes by the blood stream and sometimes up along the ureter. He illustrated his remarks by the notes on two cases, in one of which the infection was hæmatogenous and in the other urogenous. Both the patients recovered. Mr. Pringle laid stress on the similarity of the symptoms in this condition with those seen in acute intra-abdominal disease.—Mr. GUNN said that acute B. coli infection occurred more commonly in children than was generally supposed. While in the majority of cases they got pus in the urine, yet in quite extensive B. coli infection a clear urine was common.—Mr. STOKES raised the question as to whether B. coli might not be present in urine without any inflammation of the kidneys or bladder being present. About four years ago he was requested by the pathologist to examine 10 cases of urine from typhoid patients, and B. coli were found in them all.—Mr. PRINGLE, in reply, said he had not met with cases in children. As regards B. coli being found in typhoid cases, they were commonly found in urine without any symptoms of inflammation. If the kidney had a lowered resistance then an acute infection set in.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 27th, Mr. A. Cuff, the President, being in the chair.—Mr. G. E. Mould, in a paper on Heredity in Insanity, said that no one could have long been engaged in the treatment of insanity without being convinced in his own mind that the occurrence of other cases in persons related to his patients was so frequent, so almost invariable, as to be of the nature of cause and effect, and yet the matter was one very difficult to prove. The inheritance of insanity could not be likened to that of hæmophilia or Friedreich's ataxia, for, broadly speaking, an individual did not inherit any particular form of insanity. What he did inherit was a particular constitution of the nervous system which rendered him subject to the most diverse complaints, such as asthma, tuberculosis, epilepsy, alcoholism, organic nervous disease, hysteria, and various forms of insanity which differed from one another as much as did the before-mentioned disorders. Some forms seemed to be inheritable in themselves—e.g., puerperal mania, melancholia, with the capacity to carry out the suicidal impulse, and the tendency to break down at the same critical periods of life. Less markedly hereditary were periodic and delusional insanity and perhaps dementia præcox. While hysteria ran in families this was probably due to imitation. General paralysis could not be considered hereditary as such, but it was probable that for syphilis to produce general paralysis a particular nervous constitution was necessary, which was heritable. Another indirect means for the inheritance of insanity was furnished by the fact that a man inherited his circulatory system as well as his nervous system. They knew that arterio-sclerosis ran in families and the proper working of the brain depended upon its blood-supply. The mother had the greater tendency to hand on insanity to both sexes, but especially to her daughter. Marked eccentricity in the mother was frequently followed by insanity in the daughter. The father seemed to hand on outward resemblance, the mother character—i.e., nervous system. There was a panicky feeling abroad to-day concerning insanity and heredity. Some of the measures advocated would produce more insanity than they would prevent. Had the insane King George III. been sterilised we should have had no Queen Victoria or Edward VII. In a family liable to insanity the insane formed but a small proportion. Such families were often rich in the most talented individuals. The question of marriage must be judged on its merits in each case. To allow the marriage of a person who had recovered from an attack of insanity was serious, but it must be remembered that many adolescent attacks were not repeated. It was interesting to note that the three forms of insanity prone to be inherited, alternating insanity, delusional insanity, and dementia præcox, were incurable and therefore in such cases no question of marriage was likely to arise.—Dr. W. Harwood Nutt, in a paper on the Theory and Practice of Ionic Medication, expressed the belief that ionic medication would become a recognised form of treatment, both in hospital and in general practice, owing to its excellent results, its simplicity of technique, and its general applicability. Its history and development by Professor Le Duc in France and Dr. Lewis Jones in England were sketched. The electro-motive force of the continuous current was considered the actuating power which carried the medicated ions into the tissues of the affected part. He described the dissociation of salts, acids and bases, their conversion into kations and anions when in solution as electrolytes, and their method of escape from their respective poles when under the influence of a continuous current. The remedial action was due entirely to the ionic influences of the solution and not to the passage of the current. The technique was described; also the antiseptic and precautionary preparations of the skin and electrodes to prevent contamination and burns. The importance of using a sufficient number of layers of lint in contact with the skin and the careful control of the current were emphasised. One of the models of universal electro-medical apparatus, whereby an alternating current could be transformed into a continuous one, was described. The question of dosage depended chiefly on the following factors: the extent and depth of the lesion, the nature of the disease, the age, sex, and tolerance of the patient, and finally, the ion used. A number of cases were demonstrated: one of a knee with fibrous ankylosis of 30 years' duration which gave way to one application of sodium chloride ions. The patient, a woman, could bear only 40 m.a. for 15 minutes, but it was sufficient to induce complete movement of the joint. Four cases of rheumatoid arthritis treated by iodide of potassium and salicylate ions were shown, all of which exhibited marked improvement in movements. In these cases the treatment varied from four to eight weeks, and they also received a preparatory dosage of high-frequency and electric light bath. Six cases of rodent ulcer treated by 2 per cent. zinc chloride, and lupus vulgaris treated by 2 per cent. copper sulphate, were also shown and were apparently cured. From three to nine months had elapsed since the treatment. Reference was made to the ionising influence of the X rays in cases of malignant disease and its bearing on post-operative cases.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on May 4th, Dr. F. Hinds, the President, being in the chair.—Dr. T. H. Ionides was elected president for the ensuing year, and Dr. L. A. Parry and Mr. Hugh Stott honorary secretaries.—Dr. C. F. Bailey read a paper on Fractures without Deformity

from Displacement. He said that these fractures presented few of the signs which they were accustomed to look for. For instance, the signs of local trauma due to the effusion of blood from lacerated structures might be slight or absent, there was no preternatural mobility, in some because the fracture was incomplete, in others because it was impacted. There was no crepitus, and with reference to deformity, in many it could hardly be said to exist. Loss of function might not be at all noticeable, and pain might be quite slight. He quoted a series of cases illustrating these points and showed X ray photographs of a number of examples.—Mr. W. Barrington Prowse read notes of a case of Syphilitic Nephritis. The points of particular interest were as follows: its appearance at the early period of syphilitic intoxication and apart from any other discoverable cause of nephritis. Symptoms of kidney irritation began to show within three months of infection, and in the sixth month a definite and severe nephritis had developed. There was an enormous quantity of albumin in the urine. Ascites developed before any general dropsy was present, and the amount of the ascitic fluid was very large. Great benefit was derived from a more generous diet than was usually allowed when symptoms were urgent and albuminuria abundant. The patient responded to sarsaparilla when all other medicinal means, including mercury, had failed. He made a complete recovery.—Dr. Parry read, for Mr. J. Lawrence Hamilton, a paper on Dogs and Disease. In this paper attention was called to the evils and unpleasantness resulting from the pollution of the pavements by dogs, and sanitary authorities were called upon to take more energetic steps to abate the nuisance.—Mr. Stott moved the following resolution, which was carried and ordered to be forwarded to the President of the Privy Council, the President of the Local Government Board, the President of the Royal College of Physicians of London, and the President of the General Medical Council:—

That the members of the Brighton and Sussex Medico-Chirurgical Society consider that the practice of medicine, surgery, and midwifery by unqualified persons appears to exist to a considerable extent, that danger to the public health is caused by such practice, and that either existing laws require amendment, or new laws require to be passed for the purpose of preventing any further continuance of such practice.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—At a meeting of this society held on April 25th, under the chairmanship of Dr. W. Mitchell, Mr. F. W. Goyder read a paper on the Relative Value of the Different Signs and Symptoms of Gastric Perforation. He said that in abdominal conditions accurate diagnosis was more the result of a careful weighing of probabilities than an exact science. Most of the symptoms of gastric perforation were not limited to this condition alone, but were common to all acute intraperitoneal catastrophes. The history, if accurate, might increase the probability of the gastric origin of an emergency, but an accurate history was difficult to obtain from a patient extremely ill from shock, and that obtained from relatives and friends was often untrustworthy. The diagnosis of an acute peritoneal catastrophe was, however, nearly always possible and for that immediate operation was the proper treatment. The danger of operating on a patient suffering from shock was a very real one. Where the initial shock was profound he suggested that it was safer to wait for some recovery; personally he would give morphia, but would not allow the subsequent improvement to prevent operation at the earliest favourable moment. He believed that a conscientious surgeon, having arrived at a diagnosis in an obscure abdominal condition to the best of his ability, sometimes operated because he felt he might be mistaken as to the cause rather than because he felt certain of it.—The paper was discussed by Dr. Mitchell, Mr. J. Phillips, and Dr. T. J. Wood, and Mr. Goyder then replied.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—The President, Mr. W. Morley Willis, took the chair at a clinical afternoon held by this society on May 3rd. This was the last meeting of the present session.—Mr. H. Herbert showed a case of Traumatic Dislocation of the Lens beneath the conjunctiva through ruptured sclerotic.—Miss Gray showed a patient with Osteomalacia upon whom complete Cæsarean section had been performed.—Dr. W. R. Smith showed a case of Cæsarean Section in a woman, aged 33, with generally contracted pelvis, whose true conjugate was 3 inches.—Dr. J. A. Waring showed a child with Multiple Exostoses. The mother of the patient and two other children also had exostoses.—Dr. F. H. Jacob showed a typical case of Mongolian Imbecility in a child aged 5.—The President showed a patient upon whom complete Enucleation of the Prostate had been performed. After operation he was drained suprapubically and per urethram by Sprengel's pump.—Mr. R. G. Hogarth showed a woman who had suffered from Indigestion for many years with occasional hæmatemesis. After some months' constant vomiting she was operated upon, and an extreme condition of hour-glass contraction of the stomach was found due to contraction at the seat of an old ulcer. Gastro-gastrostomy was performed and complete relief of all the symptoms followed.—Dr. G. Sturrock showed a specimen of Malformation of the Anterior Abdominal Wall in a Seven Months Fœtus, with hernia of viscera, including extroversion of the liver, which presented at the uterine os.—Dr. Ashworth showed Two Cystic Kidneys from a woman aged 50 in whose family four others had had similar kidney trouble.—Dr. J. W. Scott showed a specimen of Congenital Heart Disease, with atresia of the pulmonary artery, patent ductus arteriosus, and patent septum ventriculum.

Reviews and Notices of Books.

Handbuch der Anatomie und Mechanik der Gelenke. By Professor RUDOLF FICK, Professor und Vorstand des Anatomischen Instituts der Universität, Innsbruck. Vol. II., pp. 376. With 350 figures in the text and two plates. Price 12 marks. Vol. III., pp. 688. With 248 figures in the text and 18 plates. Price 33 marks. Jena: Gustav Fischer. 1911.

THE appearance of these two volumes of Professor Karl von Bardeleben's "Handbuch der Anatomie des Menschen" completes the extraordinarily detailed study of the joints undertaken by Professor Rudolf Fick. Volume II. deals with the general mechanical principles of joints and muscles. The various physical factors underlying the movements of joints, and their ample illustration by ingenious mechanical contrivances, are dealt with in great detail. Analysis is made of all the possible movements between the contact surfaces; the movements are classified, tabulated, and discussed with an extraordinary elaboration of minutiæ. It would be difficult to name any science from higher mathematics to pathology which is not drawn upon to illustrate and exemplify the many ramifications of the subject into which the author is led. To the average anatomist this array of all the sciences is apt to be alarming, and a first survey of the work gives the impression that the very completeness of the study of the joints has made it a very complex matter. Prolonged familiarity with the work will doubtless clear away this impression, and if it is felt that rather much of mechanics and mathematics is introduced into the discussion of living human joints, it must also be owned that the vital principles of muscular movement as studied by the physiologist are treated with an equal fulness. In the construction of diagrams to illustrate the mechanical features of the joints the author has displayed great ingenuity, and he has ransacked all departments of mechanical and mathematical science for devising charts of the movements of bone upon bone.

In Volume III. the several joints of the human body are taken in order, and the mechanical details of all their possible movements are studied. More anatomical interest attaches to this than to the second volume, for there is more living reality in the work, and its treatment, though rigidly scientific and wonderfully detailed, is not so tediously academic. The practical bearing of the subject is more apparent, and the author has done well to develop the clinical utility of a thorough knowledge of the mechanical principles of joints. The surgeon and physician may both gain by a more precise knowledge of

the joints] than that usually acquired in the medical curriculum; and though to the theorist it may seem a descent from the discussion of planes and screws and pulley systems to the study of dislocations and contortionists, still, in England at least, ultimate practical utility is, in a great measure, the criterion of excellence in human anatomical research.

An altogether unusual amount of careful work is embodied in these volumes. They contain a complete and detailed discussion of practically all that is known concerning the mechanics of the joints, and upwards of 500 previous treatises are referred to in the bibliography given by the author. The illustrations are mostly diagrammatic, and they are conceived with much ingenuity and displayed with great clearness, considering the complicated nature of many of them. Those illustrations which are not charts or pure diagrams are admirably executed pieces of work, and the skiagrams are surprisingly perfect. The very completeness of the present treatise defies a detailed criticism of its contents. Professor Rudolf Fick has produced a classical work, and one which must in all probability remain for long the standard work on joints in any language.

Expansion of Races. By CHARLES EDWARD WOODRUFF, A.M., M.D., &c. London and New York: Rebman, Limited. 1911. Pp. 495. Price 17*s.* net.

Dr. Woodruff's "Expansion of Races" is an interesting and suggestive book, but not a convincing one. It is not that we do not feel inclined to agree with the thesis expounded, but that we do not feel that the thesis is proved. Dr. Woodruff considers that the laws of the movements of populations, the migrations of peoples, are analogous to those governing the movements of fluids, and are to be inferred from a universal over-population. This over-population, according to the author, is caused by increase in the production of food, and is a good thing, because not only does it lead to expansion, but it gives us that "poverty and want which keep us healthy," inasmuch as they prevent "the idleness which brings decay." Do poverty and want either keep us healthy or prevent idleness?

Dr. Woodruff takes low wages of labour, cheapness of life (as in China), insufficient housing, and other similar conditions as proofs of over-population. But all these are merely expressions of poverty, and it is not in any sense proved that poverty is due to over-population even relatively to the production of food. It is at least more probable that most poverty is due to bad organisation or lack of organisation. No student of the reports of the Poor-law Commission is likely to admit Dr. Woodruff's premisses, who is content, by the way, to say that the poverty question "cannot be solved, for it is *natural* that there should be a large class of unemployed ....." The italics are our own and point to the flaw in the argument which assumes that the conditions under discussion are not controllable by human means, a statement which every year goes further to disprove. Despite the interesting nature of Dr. Woodruff's study, one cannot but regret that he has allowed his hypothesis to carry him away, as when he says of Christianity that "It is more blessed to give than to receive" could never have been thought out by the rich, and that "the whole book [the Bible] appeals to those in want—'Come unto me ye who are weary and heavy laden and I will give you rest,'" and argues therefrom that "it is remarkable that the highest and best religion is itself an evidence of constant over-population." There are aspects of life and laws as inviolable as any physical laws which Dr. Woodruff obviously has no cognisance of, and he is so certain of the all-embracing nature of his hypothesis that he does not even trouble to hold his judgment in suspense against the appearance of unsuspected facts. The passages relative to the Jews show this clearly, as does also a paragraph about "rich Englishmen" who caused the Boer War and "took to their heels and whined for protection as soon as actual fighting began." We cannot but feel that Dr. Woodruff has not sufficiently verified his facts, but has rather gathered such statements or presentments of facts as happen to fit in with his own preconceptions.

"Expansion of Races" is written with great vigour and courage, and a great deal of the book will certainly not please Americans. Dr. Woodruff's prophecies with regard to the future hold no place for America as a dominant nation—on the ground, apparently, that America has not the climate to breed dominance, but place the ruling of the world in the hands of the nations who occupy the North-Western corner of Europe; while, "above all else, future populations will be so dependent that war will be impossible," and the author sketches out a future parliament of man and federation of the world on most business-like lines. But the prophecy goes even further, and extends to a time, æons of years ahead, when "man will disappear by evolving into a different creature."

Interesting as these speculations are they are mere speculations, not made any the less so by the presentation of some facts which tend to support them. An impartial analysis of Dr. Woodruff's facts without any attempt to relate them to an outside hypothesis would have been of greater scientific value than the book as it stands, which is not improved by the crude and unmodified application of Darwinian theories. Human civilisation is too complicated a thing to be treated in this sketchy manner, and there is at least the probability of forces being at work of which we have at present only vague knowledge. To attempt final judgments is to court disaster except on the basis of a complete accuracy and impartial observation of facts, and we do not observe these qualities in the "Expansion of Races," although we do see much that will stimulate discussion and perhaps research.

An Introduction to Surgery. By J. RUTHERFORD MORISON, M.A., M.B. Edin., F.R.C.S. Edin. & Eng.; Professor of Surgery, University of Durham, College of Medicine, Newcastle-upon-Tyne; and Senior Surgeon to the Royal Victoria Infirmary. With 146 illustrations in the text and 5 coloured plates. Bristol: John Wright and Sons, Limited; London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1910. Pp. 162. Price 8*s.* 6*d.* net; interleaved, 9*s.* 6*d.* net.

THE relative value of lectures and text-books in surgery is difficult to determine. Now that works on surgery are so numerous and of every variety, it seems superfluous that an attendance on a series of lectures on a subject should be compulsory. But in lectures it is possible to pay more attention to general principles than can be done in a text-book. The detail can for the nonce be ignored, with the result that the student grasps more fully the fundamental principles on which the science is based. In the volume before us Mr. Rutherford Morison, who is known to hold many original views on surgical matters, has embodied the substance of his own lectures, and he tells us that the fragmentary and dogmatic character of the teaching is due to the fact that he has intended to provide a supplement to the standard text-books, and not a substitute for them. The book must be examined with a recognition of the principles on which it has been written. We find it to be extremely suggestive; it contains very much that is not to be found in most works on the subject, it is copiously illustrated with excellent pictures and diagrams, and in our opinion Mr. Morison has been singularly successful in carrying out his purpose.

It may well be imagined that a work which traverses the whole subject of surgery in 160 pages must contain many statements which lend themselves to criticism, but we refrain, for there is so much that will evoke the agreement of all surgeons that we can well excuse a little dogmatism on a few points, particularly when the aim of that dogmatism has been explained. We hope that the book will attain to many subsequent editions, and that it will not undergo enlargement sufficient to transmute it beyond recognition. It has a reason and a character of its own.

Manual of Cystoscopy. By J. BENTLEY SQUIER, M.D., Professor of Genito-Urinary Surgery, New York Post-Graduate Medical School and Hospital; and HENRY G. BUGBEE, M.D., Instructor in Genito-Urinary Surgery, New York Post-Graduate Medical School and Hospital. New York: Paul B. Hoeber. 1911. Pp. 117. Price $3 net.

EVERY year the importance of the visual examination of the bladder by means of the cystoscope is increasing, and though at first the use of this instrument was almost confined to surgeons specially interested in this department now it is much more widely employed; and as the value of the information which may be obtained by the cystoscope is very great, it is to be hoped that its employment will become still more extensive. There are, however, comparatively few works which give practical directions which will enable the reader to utilise the cystoscope, which is what Dr. Squier's work does. The mechanism of the apparatus is first described and then an account is given of the varying appearances of the normal bladder wall; then follow descriptions of the various morbid conditions met with in the bladder, and the methods of identifying them are pointed out. Some 25 plates, mostly coloured, represent what can be seen by the cystoscope, and an account of cystoscopic ureteral catheterisation concludes the book. It is clear that it is not possible in a work of this size to give a full account of all the vesical lesions, but it is well that the information in such a work should not present too elaborate an account of the subject. We are of opinion that the book has a very definite value as an introduction to the study of the cystoscopic examination of the bladder.

A Text-book of Public Health. By JOHN GLAISTER, M.D. Glasg., D.P.H. Camb., F.R.S.Edin., Professor of Forensic Medicine and Public Health in the University of Glasgow. Second edition, with 133 illustrations. Edinburgh: E. and S. Livingstone. 1910. Pp. 622. Price 12*s.* net.

THIS volume forms the second edition of part of the author's "Text-book of Medical Jurisprudence, Toxicology, and Public Health." This text-book in the first instance appeared as one volume, but owing to the growth of our knowledge in both subjects has been divided into two volumes, the present volume forming the second part of the original text-book. The work is a very thorough one, and although the arrangement of the subject-matter is somewhat different from that of most other text-books, there are those who will regard this as an advantage rather than the reverse. The main difference is that the law relative to each branch of the subject is dealt with immediately after that branch has been considered, in order that the student may study the legal aspects of each branch separately and at once, in place of reading law as a whole at the end of the volume, as he is usually asked to do in text-books of this nature. To a certain extent this volume seems especially well fitted for Scotch medical students, since the laws and practices of Scotland are very fully treated of. But the text-book as a whole is of a high order, and it has in the present edition been brought very fully up to date. The chapter on statistics is particularly well done, and it contains a mass of information which is rarely found in text-books of this size and class, and similar comment may be passed upon the chapter dealing with preventable diseases, in which, by the way, a useful summary as regards the practices and statistics relative to vaccination in different countries is furnished. The book is well written and in interesting fashion.

In view of the many good points in this volume it is perhaps a pity that more attention has not been directed to the question of the composition and values of different foodstuffs; for this is a very important subject, both for the public health official and for the general practitioner. A good summary as to the law relating to the sale of food is to be found in Chapter XVII., but the information relative to foods themselves is scanty. A further edition of the work will certainly be called for, and we suggest that Professor Glaister should then take the opportunity materially to supplement this side of an excellent treatise.

"606" in Theory and Practice. By Geheimrat Professor Dr. PAUL EHRLICH and J. E. R. MCDONAGH, F.R.C.S. Eng., Surgeon to Out-patients, London Lock Hospital. London: Henry Frowde and Hodder and Stoughton. 1911. Pp. 143. Price 7*s.* 6*d.* net.

THE directors of the Oxford Medical Publications have done good service in putting before the medical public a book on "606" by Professor Ehrlich, through whose laboratory researches the remedy has been discovered and utilised, and by Mr. J. E. R. McDonagh, an early exponent of its use in this country. With every new preparation there is a very natural tendency for it to be applied in cases that are unsuited for it, and much of the opprobrium that the remedy has received may have been due to its use in unsuitable cases and possibly to its employment by those who have not mastered the technique. This work deals especially with the clinical use and the methods of administration of "606," and a number of cases, some of which have already been reported in THE LANCET, are detailed in which the remedy has been employed. The important subject of the use of salvarsan in syphilis of the nervous system receives due consideration, a whole chapter being devoted to it, for its value is as marked in the syphilitic lesions of the nervous system as it is in those of any other part of the body, but extra care is required because of the possibility of harmful results.

Our readers will find here an authoritative statement of the case for "606" as it stands at present; time must elapse to prove some of the expectations.

Précis d'Obstétrique Opératoire. By Dr. R. DE SEIGNEUX, Professor in the Faculty of Medicine in the University of Geneva. Première Partie, Deuxième Partie, 1909, 1910. Geneva: Librairie Kündig. Pp. 142 and 158.

THE author has written this book to enable the practitioner to be in a position to conform to the saying of Lejars. "To know at any moment what ought to be done, to know how, and to be able to do it," is a condition necessary for adopting a proper line of conduct in the varying circumstances of midwifery practice. It is as important, if not more important, to know not only how to carry out any given operative procedure but to be familiar with the precise indications and contra-indications attending the procedure chosen. As the author remarks truly in his preface, all is precise in midwifery; there are not two ways of carrying out any operation, while the indications, as a general rule, are no less precise than the methods of operating. For this reason the practice of this branch of medicine is very satisfactory, the diagnosis of any condition is usually easy, and not less easy is the decision in the majority of cases as to the proper treatment to be adopted.

In the first part of the work Professor de Seigneux considers briefly the fundamental principles of operative midwifery, and in the second part some general principles, the treatment of the various stages of normal labour, and in considerable detail the application of the forceps. A third part is yet to appear, and this will contain an account of the remaining obstetric operations. There are a large number of illustrations, most of them taken from the classical work of Farabeuf and Varnier, and some from Bumm's "Textbook of Midwifery." It is a pity in some ways that most of the illustrations on the application of the forceps depict a very old-fashioned model of Tarnier's, and as in all cases the pelvis is in the dorsal position the illustrations will not make general appeal to English readers. We have no doubt, however, that the work will prove of use to those for whom it is written, and the description of the indications for, and the mode of application of, the forceps is certainly very full and good.

LIBRARY TABLE.

From Hausaland to Egypt. By KARL KUMM, Ph.D. London: Constable and Co. 1910. Pp. 324. Price 16*s.* net.—Dr. Karl Kumm's book of travel from Nigeria across German and French territory to Egypt is an interesting and chatty account of a journey undertaken on behalf of the Sudan United Mission, the business of which is to devise means and take measures to combat Mohammedan missionary enterprise. The larger part of the book is taken up with an account of the journey, and there are copious and valuable illustrations, mostly from photographs. There are also some good coloured plates of butterflies. Much hunting lore is scattered here and there, for which the journey gave many opportunities. Elephant, rhinoceros, and hippopotamus, as well as an abundance of lesser game, all fell to Dr. Kumm's rifle. Beyond the story of the journey the author has no special plea to bring forward, a fact which renders his occasional notes on administrative difficulties, on race problems, and on religious questions of all the more value. The short account of the French operations in the Central Sudan, which have led to the carving out of a great State, read like a romance: a romance, indeed, with a very lurid background in the story of the expedition which went mad and indulged in a riot of vice, crime, and debauchery, not stopping at murder of superior officers, and ending grimly in the assassination of its leaders. We note that Dr. Kumm considers that the problem of a half-caste *Eurafrican* population will be very serious in the future—in this agreeing with many observers in South Africa. There should, by the way, be a good deal of material accumulating for a scientific study of the "survival value" of mixed European and African stocks. Another interesting suggestion is that of the desirability of European powers agreeing on a common native policy in Central Africa. Altogether Dr. Kumm's book is a useful account of countries bound to become increasingly important.

The Bacillus of Long Life. By LOUDON M. DOUGLAS, F.R.S.E. With 57 illustrations. London: T. C. and E. C. Jack. 1911. Pp. 165. Price 5*s.* net.—This book is described on the title-page as "a manual of the preparation and souring of milk for dietary purposes, together with an historical account of the use of fermented milks from the earliest times to the present day, and their wonderful effect in the prolonging of human existence." It will be gathered from this that Mr. Douglas's volume is intended largely for the public. The chapters on the chemistry of milk, the bacteriology of fermented milks, the preparation of soured milk, and on modern dairy practice should prove useful to those milk-sellers and dairy-farmers who take an intelligent interest in the modern requirements of their trades. There is a wealth of illustrations, some of them not very relevant to the subject in hand and others rather advanced for the ordinary layman unversed in bacteriology. The author does not fail to acknowledge his debt to Professor Metchnikoff.

Principles of the Science of Organisation. By MARSHALL BRUCE-WILLIAMS. London: Chapman and Hall, Limited. 1910. Pp. 42, with coloured charts. Price 10*s.* 6*d.* net.—Mr. Bruce-Williams is the founder and manager of the Knowledge Organisation Bureau, Limited, and this book of charts and diagrams contains the principles upon which he bases his science of organisation. The fundamental axiom of his method is "that the organisation of the individual is the key to the organisation of society," which is easy enough to appreciate; but the elaborate coloured charts and quasi-scientific explanations wherewith the author expounds and applies his methods are by no means so easy to follow, and, indeed, strike us as being often fanciful and sometimes incoherent. Mr. Bruce-Williams claims that his method provides a material form in which the fields of knowledge and the action of men in society may be mapped out. This material form is the card index system. Although we feel here and there that there is something in this science of organisation, the book does not convince us.

The Dentists Register for 1911.—We have received from the General Medical Council a copy of the official Dentists Register for the current year, published by Spottiswoode and Co., Limited. The Register contains 4883 names, of whom just over 3000 obtained their qualifications by examination, the remainder having been admitted in accordance with the terms of the Dental Act of 1878. The price of the Dentists Register is 3*s.* 4*d.*, so that the public cannot complain that there is any pecuniary prohibition to obtaining the information as to who is a registered dentist and who is an unqualified practitioner.

Principles and Application of Local Treatment in Diseases of the Skin. By L. DUNCAN BULKLEY, A.M., M.D., Physician to the New York Skin and Cancer Hospital, &c. London: Rebman and Co. Pp. 130. Price 4*s.* 6*d.*—Roughly, dermatologists may be divided into those who lay stress on internal treatment and those who consider that external treatment is the more efficacious in diseases of the skin. Dr. Bulkley can be by no means accused of undervaluing the importance of internal treatment, for he is one of the chief exponents of the great effect produced by diet in skin diseases, and, therefore, a work by him on the local treatment of diseases of the skin is likely to be less inclined to exaggeration than if it had been written by one who considered local measures the more important part of treatment. The work consists of reports of four lectures delivered by Dr. Bulkley at the New York Skin and Cancer Hospital, and we think he has done well to print them. The author does not appear to be using X rays so freely for ringworm of the scalp as do most dermatologists in this country.

Insects and Disease: A Popular Account of the Way in which Insects may Spread or Cause Some of our Common Diseases. By RENNIE W. DOANE, A.B, Assistant Professor of Entomology, Leland Stanford Junior University. With many original illustrations from photographs. London: Constable and Co., Limited. 1910. Pp. 227. Price 8*s.* net.—The increasing appreciation of the importance of insects in the spread of disease has rendered it desirable that a knowledge of the habits of insects and the methods of prevention of the diseases produced by them should be widely spread. Professor Doane has done well in publishing a popular account of insects which are associated with disease. It is only natural that the greatest prominence is given to the mosquitoes as causers of malaria

and yellow fever, but other insect pests are not neglected. The connexion of fleas with plague is now fully established, and here is given a good account of the method of association. It is the opinion of many that house-flies may serve to spread typhoid fever, and therefore attention is drawn in this work to the need of reducing the number of flies. In the cases of all these insects the right method of dealing with them is to prevent the breeding of the insects, rather than to attempt to kill those which have already developed. Here will be found an account of the chief methods which have been employed to prevent insects breeding. The book is very readable and adapted for those who have no technical knowledge of medicine, and yet it is accurate, as might have been expected from the standing of the author. The illustrations are numerous and accurate, and the book can be thoroughly recommended as alike interesting and instructive.

Enlargement of the Prostate: its Treatment and Radical Cure. By C. MANSELL MOULLIN, M.D. Oxon., F.R.C.S. Eng., Vice-President of the Royal College of Surgeons, Consulting Surgeon to the London Hospital. Fourth edition. London: H. K. Lewis. 1911. Pp. 176. Price 6*s.* net.—This is the fourth issue of Mr. Mansell Moullin's well-known work on the treatment of prostatic enlargement, and in preparing it he has endeavoured to eliminate all that is out of date in the treatise and to insert those methods and modifications of methods which have been introduced since the appearance of the third issue. It is interesting to see the present opinion expressed on vasectomy, which for a short time was so much in vogue that disputes arose as to the priority of its invention, for we are told that it has no effect upon enlargement of the prostate though relief has in a certain number of cases followed its employment. Mr. Mansell Moullin agrees that orchidectomy has a very definite effect in many cases of prostatic enlargement and that in some cases absolute and permanent cure has resulted, but he allows that at present the operation has been almost completely abandoned. The chapter on the difficult subject of the choice of treatment is carefully and judiciously written.

JOURNALS AND MAGAZINES.

Annals of Tropical Medicine and Parasitology. Vol. IV., No. 4, March, 1911. Illustrated. Liverpool School of Tropical Medicine. Pp. 171. Price 7*s.* 6*d.* net.—This number of the "Annals of Tropical Medicine" contains the following contributions: 1. A Note on the Pathology of Lesions of the Cornea and Skin in Animals Experimentally Infected with T. rhodesiense, by Warrington Yorke. 2. A Case of Sleeping Sickness Studied by Precise Enumerative Methods: Further Observations, by Major R. Ross and David Thomson. 3. Enumerative Studies on Trypanosoma gambiense and T. rhodesiense in Rats, Guinea-pigs, and Rabbits: Periodic Variations Disclosed, by H. B. Fantham and J. G. Thomson. 4. The Life-History of Trypanosoma gambiense and T. rhodesiense, as seen in Rats and Guinea-pigs, by H. B. Fantham. 5. Experiments on the Treatment of Animals Infected with Trypanosomes by Means of Atoxyl, Vaccines, Cold, X Rays, and Leucocytic Extract; Enumerative Methods Employed, by Major R. Ross and J. G. Thomson. 6. Auto-agglutination of Red Blood Cells in Trypanosomiasis, by Warrington Yorke. 7. On a New Genus of Culicinæ from the Amazon Region, by R. Newstead and H. F. Carter. 1. The series of changes produced in the corneæ of infected animals by this new species of trypanosome, as observed by Dr. Yorke, is very remarkable. The sequence of events seems to be that the cornea of one eye is infiltrated with leucocytes and parasites and gradually becomes œdematous and densely opaque. This condition then clears up, and the other eye may be affected in a similar manner. After a time the condition appears again, and may again clear up unless the animal dies from trypanosomiasis before sufficient time has elapsed for this to occur. The parasites appear to be absent from the peripheral circulation when these changes occur. Like the increase in the number of trypanosomes in the blood, these affections of the corneæ appear to be periodic. 2. This contribution is a continuation of the observations upon a case of trypanosomiasis due to the new species, T. rhodesiense. A chart is given which shows at a glance the condition of the patient under the various treatments tried. The authors admit that in the case of most of these treatments the results were negative, but they suggest that some definite results were produced by the injection of dead trypanosomes and leucocytic extract. The patient was apparently moribund on May 19th, but showed a sudden and remarkable improvement on May 21st according to the chart, on May 20th according to the text. The authors suggest that this may have been due to the "vaccine," but say "at the time he had atoxyl and nuclein to increase the leucocytes; hence it is almost impossible to tell what was the potent factor." On consulting the chart we find that at the time of the improvement, or within two days preceding it, he was also having 12 grains of methylene blue, 20 grains of quinine, and yeast and leucocytic extract daily, and that a course of succinamide of mercury had been concluded only six days before. Moreover, a consideration of the chart before "vaccine" and extract of leucocytes were used, and of the charts given in the paper which follows of animals experimentally infected with trypanosomes, shows that there is so much irregularity in the rises and falls in the numbers of parasites in the blood, independently of treatment with these or any other substances, that only a very striking difference and obvious effect connected with some form of treatment would justify any general conclusions. No such marked effect, indeed, nothing at all that might not with equal justice be attributed to the usual course of the disease, is shown by the curve on the chart representing the daily variations in the number of parasites during the treatment with dead trypanosomes and leucocytic extract. Almost the same might be said with regard to the variations in the number of leucocytes. Even had some change appeared in the number of parasites or leucocytes quite unlike anything previously observed, and immediately following upon either of these treatments, a general and definite conclusion would hardly have been justified by what happened once, or even twice, in the course of a disease of which a marked feature is the irregularity in the increase and diminution in the number of parasites and leucocytes. We cannot, therefore, agree with the authors' dictum that "it appears to be a law (at least, it seems to hold good, we think, with regard to leucocytes and trypanosomes) that the extract of dead animal cells stimulates the corresponding live cells to increase in numbers." The authors appear to disagree with the explanations of Massaglia, Thiroux, and others with regard to the explanation of the periodic increases and decreases in the number of the parasites in trypanosomiasis. One of their expressed opinions offered as an alternative is that "*the increase of parasites is due to their sudden and active multiplication.* The presence of numerous dividing forms during the cyclical rise would seem to support this statement." The italics are theirs. Surely this can hardly be taken as an explanation; it means no more than that the multiplication of the parasites produces more parasites. 3. In this paper the authors describe the results of inoculation with T. rhodesiense and T. gambiense carried out in a number of animals. Of the two strains the rhodesian was the more virulent. Enumeration of trypanosomes in the peripheral blood revealed remarkable

variations or oscillations in the numbers of the parasites from day to day, the variations being of the nature of a "periodic increase and decrease at more or less regular intervals," the charts certainly emphasising the "less." Here the authors, unlike the authors of the preceding paper, attribute the periodicity to variations in resistance on the part of the host, probably due to the formation of antibodies, accompanied by the formation on the part of the trypanosomes of rounded, latent, non-flagellate (relatively resistant) forms in the internal organs of the host during the fall in numbers of the flagellate forms in the peripheral blood. 4. This contribution by Dr. Fantham is of particular interest, as it is the first confirmation which has appeared of the work of Moore and Breinl upon the life-history of trypanosomes in mammals. In 1907 and 1908 J. E. S. Moore and A. Breinl described rounded non-flagellate forms of trypanosomes as occurring in the internal organs of mammals during the periods when the flagellate forms were decreasing or absent in the peripheral circulation. These rounded forms, they stated, were latent stages in the life-history of the parasites, and they traced intermediate stages between them and the fully developed flagellate forms. Their observations met with considerable scepticism, and have not hitherto been generally accepted, though a few other authors have mentioned rounded bodies in connexion with trypanosomes without describing intermediate forms. In the present paper the general statements of Moore and Breinl regarding forms of T. gambiense in the internal organs of rats are confirmed, and many details in the living parasite as well as numerical data from daily counts are supplied in proof of the significance of the latent bodies. Dr. Fantham adds considerably to the observations of Moore and Breinl, and his communication is thus of far more importance than a mere confirmation, though in this case we feel that confirmation alone would have been of unusual value. In observing the living organisms he has concluded that the non-flagellate bodies grow and become flagellate when placed in warm non-infected blood. The non-flagellate bodies of trypanosomes are the post-flagellate stages of one generation and the pre-flagellate stages of the succeeding generation. There is a life-cycle of trypanosomes in vertebrate hosts comparable with those of Crithidia and Herpetomonas in the alimentary tracts of various invertebrates. The latent (relatively resistant) stages of trypanosomes occurring in vertebrates are separate from, and in addition to, stages of the parasite which may occur in the invertebrate carrier. For successful treatment a drug needs to be found which will either prevent the formation of the latent stages or disintegrate the latent bodies when they are already formed. 5. Of the many experimental treatments the results of which are described in this paper the authors appear to attach the most importance to treatment in the cold chamber, but it is quite impossible to admit that the experiments were adequate to justify the drawing of any conclusions therefrom. The treatment in the cold chamber may be taken as an example, being that which is most favourable to the authors. Seven guinea-pigs were inoculated with T. gambiense. Of these four were taken as controls and three were treated in the cold chamber. The duration of life in the controls was 28, 30, 105, and 79 days. In the three guinea-pigs treated in the cold chamber the duration of life was 102, 93, and 74 days. Two guinea-pigs were inoculated with T. rhodesiense, one being used as a control, the other being treated in the cold chamber. The former lived 79 days, the latter 120 days. Eight rats were also used to experiment with both strains of trypanosomes, five being controls and three being treated in the cold chamber. The duration of life in the controls was 19, 15, 17, 8, and 13 days, while in the treated rats it was 12, 26, and 11 days. From these figures the authors come to the conclusion that the "animal lives longer in the cold." When it is realised that one of the four control guinea-pigs infected with T. gambiense lived longer than any of the three that were treated, and that a greater number of animals was used in this part of the experiment than in any other part, comment upon the value of a conclusion arrived at from such data is quite unnecessary.

Progressive Medicine: a Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, assisted by LEIGHTON F. APPLEMAN, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. Vols. II. and III., 1910. London: Rebman, Limited. Vol. II., pp. 263; Vol. III., pp. 338. Price 12*s.* each volume.—Amongst the contents of Vol. II. for 1910 are articles on Hernia by Dr. W. B. Coley (Columbia University, New York); Surgery of the Abdomen, by Dr. E. W. Foote (Columbia University); and Gynæcology, by Dr. J. G. Clark (Philadelphia). Dr. Alfred Stengel (Philadelphia) contributes a summary of the recent investigations on diseases of the blood. In discussing the treatment of pernicious anæmia he refers to the results obtained by Professor Klemperer and others by the action of cholesterin. It has been shown that this substance will under certain conditions prevent hæmolysis. Professor Klemperer used one litre of cream and 200 grammes of butter, instead of the too expensive and probably too strong 3 per cent. solution of cholesterin in oil. An analysis showed that this amount of food contained 2·19 grammes of cholesterin a day. He came to the conclusion that the results of this treatment, although satisfactory, were not sufficiently noteworthy to warrant the adoption of cholesterin in place of arsenic. The treatment of Addison's disease is also discussed. It is contended that the first aim should be to attempt to prevent the development of the acute phase of the disease. The patients should avoid exertions and contact with infectious processes, and should refrain from toxic drugs, especially arsenic, which appears to be a violent poison in cases of suprarenal insufficiency. Good results have followed the administration of phosphates, and especially of lecithin. This volume concludes with a review of the progress of Ophthalmology by Dr. E. Jackson (Colorado). In Vol. III. Dr. W. Ewart gives a summary of the principal observations which have been made in diseases of the thorax and its viscera, including the heart, lungs, and blood-vessels. Attention is drawn to an article by Dr. R. C. Cabot on "The Normal Auscultatory Differences between the Notes of the Chest," and to another by Dr. J. C. Da Costa, jun., on "The Practical Value of Spinal Percussion in the Diagnosis of the Diseases of the Chest." Both these communications are well worthy of study. Advances in the knowledge of dermatology and syphilis are considered by Dr. W. S. Gottheil (New York). The new methods for the diagnosis of syphilis, especially Wassermann's reaction, are fully discussed, and several cases of syphilis maligna are recorded. The section on obstetrics is by Dr. E. P. Davis (Philadelphia), a large proportion of the remarks being concerned with the various aspects of the "toxæmia of pregnancy." Diseases of the nervous system are summarised by Dr. W. G. Spiller (University of Pennsylvania). The subject of cerebral tumour is especially commented on, the symptoms caused when various parts of the brain are affected being accurately described. These volumes form a useful work of reference, and being published yearly the information contained in them is fully up to date.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

CONCENTRATED DIPHTHERIA ANTITOXIN, "WELLCOME BRAND."

(BURROUGHS, WELLCOME, AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

THIS concentrated diphtheria antitoxin is prepared by a method of salt precipitation which has been found to give the most satisfactory results. The advantage of the concentrated preparation is that the antitoxin can be given in comparatively small volume, and of course large doses are indicated in the treatment of diphtheria. Generally speaking, it is stated that sera treated by the method used in preparing this concentrated diphtheria antitoxin are less liable than the ordinary unconcentrated sera to produce rashes and other undesirable symptoms in susceptible patients. Hermetically sealed phials of 1000 up to 5000 units are supplied, each 1000 units being contained in 1 c.c. or less of the fluid.

IODINE TUBES.

(R. SUMNER AND CO., LIMITED, 50A, LORD-STREET, LIVERPOOL.)

These tubes are very handy for the extemporaneous preparation of tincture of iodine. On merely adding alcohol in requisite quantity the perfectly fresh tincture of iodine is at once obtained. The tubes have been made at the suggestion of Major F. J. W. Porter, D.S.O., R.A.M.C. They ensure the supply of an antiseptic fluid useful in many ways both to the army and civil surgeon. They are equally available for making the ordinary solution of iodine in potassium iodide.

PEPSIN AND BISMUTH.

(BLAKE, SANDFORD, AND BLAKE, 49, DOVER-STREET, PICCADILLY, LONDON, W.)

This may be described as a classic formula made up on modern pharmaceutical lines. It is a thin syrup with a slightly acid reaction containing the ammoniated citrate of bismuth and pepsin. It is quite pleasant to the taste and is permanent. Distinct evidence was obtained in an experiment we made of its digestive action upon animal protein, fine beef meal being employed for the purpose.

BROMURAL.

(KNOLL AND CO., 8, HARP-LANE, LONDON, E.C.)

Bromural was described on a previous occasion in these columns, when it was pointed out that it was a compound obtained by combining urea with the bromine-valerianyl group. Its sedative action is referred not to the presence of bromine, but to the iso-propyl group contained in the valeric acid. It is regarded as a harmless hypnotic, and this view of it receives confirmation from a recent case in which suicide was attempted by means of bromural. The patient had taken 30 tablets of bromural—that is to say, 150 grains. Healthy sleep followed, and after 16 hours the condition of the patient was in no sense serious. The patient ultimately resumed a normal state. It appears from this that bromural, while being prompt in action, is harmless even in large doses, and it does not appear to give rise to injurious secondary and after-effects. Its employment in neurasthenia and hysteria is favourably mentioned in German clinics.

GAULTHERIA EMBROCATION.

(CORBYN, STACEY, AND CO., LIMITED, 673, COMMERCIAL-ROAD EAST, LONDON, E.C.)

This is an emulsion of the consistence and the colour of cream. It contains ingredients of well-known efficacy, coupled with massage of the affected parts, in rheumatism, lumbago, and muscular pains. Chief amongst the ingredients is gaultheria, and the embrocation gives with perchloride of iron a violet colour due to some separation of the salicylic acid. The consistence is pleasant and the embrocation is very agreeable in application. The preparation is also of service in muscular fatigue following hard exercise.

New Inventions.

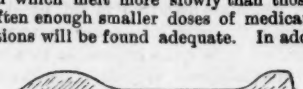
NEW ADVANCEMENT FORCEPS FOR SQUINT.

THE accompanying figure depicts a forceps made for me by Messrs. Weiss and Son, of 287, Oxford-street, W., for fixing the muscle in squint operations where advancement is needed. The same forceps can be used with equal facility for right or left eye and is quickly adjusted. It has a three-pressure grade catch, which is advantageous in that the thickness of tissue enclosed between the blades of the forceps is not the same in all cases. It will be found that the finger-rings of the forceps make it easy to hold or to transfer from hand to hand, and simple for an assistant to retain without obstructing the view of the surgeon.

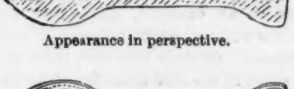
New Cavendish-street, W. W. H. JEWELL, M.D. Lond.

SEMPULES.

THE sempule appears to us to be a decided advance in the way of suppository medication. Its shape, as seen from the accompanying illustration, ensures its contact with the affected part until completely melted. Fatty bases, therefore, can be employed which melt more slowly than those commonly used, and often enough smaller doses of medicaments under these conditions will be found adequate. In addition to the convenience and adaptability of its shape the sempule contains also a wick which serves to keep the bulbous ends in position and to keep the melted medicament in its proper place between these ends. The innovation is a sound one, and was brought to our notice by the British Drug Houses, Limited, of 22 to 30, Graham-street, City-road, London, E.C.



Appearance in perspective.



Appearance in section.

THE LANCET.

LONDON: SATURDAY, MAY 13, 1911.

The National Insurance Bill.

THE Chancellor of the Exchequer has brought in the National Insurance Bill which met with a flattering reception on both sides of the House. An outline of the Bill will be found in his speech on p. 1319. The comprehensive scheme of national insurance which he developed in a clear and logical manner was at once regarded by the Opposition as well as by the Government and other sections of the House as a fine piece of constructive work, which deserved to receive cordial coöperation from all sides without regard to party considerations. There will certainly be a difference of opinion as to the advisability of dealing with the two conditions of unemployment and invalidity in one Bill, but in both sets of circumstances a fair case has been made out for contributions alike from the employer, the employed, and the State, and we endorse the closing words of Mr. LLOYD GEORGE'S eloquent exposition of his measure when he appealed to his hearers "to help the Government not merely to carry this Bill through, but to fashion it, to strengthen it where it is weak, and to improve it where it is faulty." The introduction of the Bill as one measure and not as two appears to us reasonable, if not necessary. It would seem clear that the medical man is most concerned with that part of the Bill which deals with insurance against sickness, but the briefest consideration of the actual circumstances with which the measure designs to deal, and deal in a thorough manner, shows distinctly that invalidity and unemployment are inextricably blended. This was indicated in both the Majority and Minority Poor-law Reports, and it is difficult not to believe that one joint scheme of remedy for both conditions would mean economy in each direction. The most frequent cause of invalidity is probably unemployment; the most frequent cause of unemployment is certainly invalidity. While, therefore, the provisions for guarding against and for relieving sickness are clearly the ones in which the members of the medical profession are most concerned, no one knows better than the medical man that the finest preventive of sickness which can possibly be devised must be a scheme for securing a workman against the disastrous effects of unemployment.

How closely the medical profession is concerned in the new legislation was bluntly expressed by the Chancellor of the Exchequer in the following sentences from his opening statement in Parliament:—"And what generally happens is that a workman falls ill, and if there is no provision made for him he hangs on as long as he can until he gets very much worse. Then he generally goes to another doctor, runs up a bill, and when he gets well he has to do his very best to pay that amongst other bills. He very often fails. I have met many doctors who have told me they have hundreds of pounds of bad debts of this kind, and they could not think of pressing for payment. And what really is done now is that thousands and hundreds of thousands, I am not sure that it is not millions, of men, women, and children of this class get such doctoring as they can purchase either at the expense of the food of the children or at the expense of the doctors. The doctor is a very great sufferer indeed. I do not think it is right we should do our charity at the expense of a hard-worked profession." Mr. LLOYD GEORGE'S simple words, narrating as they do the simple truth, were received with applause so general that it is impossible not to believe that the Bill, when it becomes law, will recommend a standard of medical fees considerably in excess of that which is now received by medical men under all existing forms of contract practice. Mr. LLOYD GEORGE, in the sentence we have quoted, puts forward exactly the double plea that we ourselves should have done for a fair consideration of the position of the medical men in general practice, particularly of those who practise mainly among the poorer classes. Their private practices are burdened with an almost incredible weight of bad debts—debts for which they have not the heart to press; but in contract work practitioners are almost invariably ill-paid. In both directions they are heavy and, until this occasion, unrecognised sufferers. We welcome, therefore, this outspoken admission of the fact that a large, of late an increasingly large, proportion of public philanthropy has been carried on at the expense of the medical man, and we hope surely that this position will be remedied. Although it is certain that in the matter of medical fees considerable pressure will be put upon those responsible for the conduct of the Bill to maintain something of the old niggardly scale, we do not believe ourselves that, when the House of Commons perceives how very real and how very long-standing the grievances of the medical profession are, a continuance of such abuses will be tolerated.

The natural apprehension is, of course, that the arrangements connected with the State scheme for National Insurance, including those for the provision of medical benefits, will be left too much by the Government in the hands of the friendly societies and similar bodies, whose attitude in the past, however amicable their words, has been one of distinct hostility to medical men in too many instances. Mr. LLOYD GEORGE alluded to the fact that medical men and the friendly societies are not agreed upon a standard of medical fees, and added that he was inclined to side with the medical men in believing that the terms given by the friendly societies were not remunerative to the medical profession. He might have gone much further. He might fairly have stated that over and over again and for very many years it has been proved to demonstration that the medical profession has been treated extremely badly in all forms of contract medical practice. We demonstrated this to the full in the columns of THE LANCET some 16 years ago, when we despatched a Special Commissioner to various medical centres in the kingdom to examine into the evils which had grown up in connexion with various medical aid associations. We found in instance after instance the same story of private

practices depreciated because an undue proportion of substantial citizens were joining medical clubs and were demanding to be treated on the same terms as artisans and labourers. In some cases it was thought that a small, a very small, yearly fee should cover attendance upon every member of the subscriber's family, while most of the schemes to secure for the public medical attendance at low rates were devised as far as the medical officers were concerned with extreme meanness. The management of these clubs was vested, almost without exception, in lay hands, and the interests of the medical officers were not thought of. Again, in 1903 a report of the Medico-Political Committee of the British Medical Association was issued which comprised an investigation into the economic conditions of contract practice in the United Kingdom. Time after time in this report it is apparent that, while systems of payment differ widely, remuneration of the medical man is usually extremely low, the probability being that the bad debts made in private practice were so frequent that qualified men could be found to work at any figure, because the return, such as it was, was a certainty. Upon these points, it seems to us, the attention of medical men may now well be fixed.

The State under the Bill will subsidise handsomely such societies as, providing medical aid, come under the head of "approved," that is societies which, among other things, have at least 10,000 members, do not distribute their funds otherwise than among those members, and can show proper actuarial security. In our opinion forthcoming legislation will secure the coöperation of the medical profession if the following points are met. There should be some central control or direction of the societies making the terms of emolument and the conditions of service roughly uniform and the remuneration reasonable; but reasonable remuneration is not a capitation fee of 4*s*. to the medical man. Some such figure appears to be the present average payment, and Mr. LLOYD GEORGE has himself pointed out that it is totally inadequate. We feel sure that at such a figure the support of the medical profession cannot be expected. Secondly, it is necessary that the management of the business and the remuneration of the medical men under the National Scheme of Insurance should, as far as invalidity is concerned, lie in the hands of committees upon which medical men are as fully represented as any interested laymen or as the insured; control must not remain entirely with lay officers of friendly societies or medical aid associations, seeing that the benefits of the scheme are offered, on terms, to the whole population. We understand Mr. LLOYD GEORGE to suggest that the remuneration of the medical man will be brought to a higher point, partly, at least, by relieving him of the burden of supplying and dispensing the drugs required in his treatment. This, of course, is not a new idea, and no more practical way of bringing home to the public the scientific position of medicine could be devised than one which would place the medical man in the position of one whose advice and not whose bottle is to be paid for. We anticipate practical difficulties in this direction, however, from the fact that in rural districts, if the poorer members of the public are compelled to have resort to one man for their advice and to another for their medicine great delay and hardship will be experienced. We do not, however, propose at this stage to embark upon detailed criticism of a vast measure which can hardly have reached the hands of most of our readers. Mr. LLOYD GEORGE has declared himself to be ready to meet the medical profession in a generous manner, and the onus is now upon the medical profession to demonstrate not so much that hitherto it has been very badly treated as that it now knows its own mind, and will only coöperate in a scheme where just professional claims are admitted to proper rank. The dislocation in private practice will necessarily be enormous. Patients whose wages range from 30*s*. to £3 are at present a substantial support of many private practices; all these are to be lost to the general practitioner. His work under contract terms will be lightened by the removal from his care of the tuberculous—we deal with this part of the Bill elsewhere—but venereal patients will be added to his list, which will also contain many more below the average in physique. We have every reason to believe that the Chancellor will admit the forcible arguments that there are for starting the scheme with proper recognition of medical claims.

Invalidity Insurance and Tuberculosis.

PROBABLY few of those who listened to the Chancellor of the Exchequer unfolding his great scheme looked at it through what may be called prophylactic spectacles, but a far-reaching proposal such as this, which taxes capital, the taxpayer, and the labourer in no mean fashion, could not have been so well received by the House as a whole had not the nation become more or less unconsciously imbued with the belief that an enormous proportion of our permanent incapacity and chronic ill-health, and consequently of our poverty, is due to neglected illness, to the difficulty of obtaining for a sufficiently long period medical advice, and to the deprivation of the worker and his family of adequate subsistence when chronic illness sets in. If by any scheme the resistance of the worker and his family to disease can be improved, with the consequent reduction in chronic sickness, incapacity, and poverty, the nation's capital in physical fitness and efficiency should be substantially increased and the level of enjoyment of the people materially enhanced. It must be peculiarly gratifying to German statesmen to recognise how very closely in general principles the present proposals of Mr. LLOYD GEORGE follow those which have now been in operation for so many years in Germany, and which have proved there a signal success in the prevention and cure of disease. The German scheme is more detailed than the one outlined by the Chancellor, and is perhaps more equitable by reason of the graduated payments which are exacted in connexion with the several wage-groups. But the British proposals possess the advantage of comprehensiveness and simplicity, and it is possible that the consolidation scheme which the Germans are now considering may be found to take somewhat the direction of our own proposals.

It is interesting to note that whereas in the German invalidity scheme it was tuberculosis which

was one of the prime factors in the movement, in this country this disease is presented by the Chancellor as a matter of great but nevertheless somewhat incidental importance. In Germany the introduction of invalidity insurance was largely due to the fact that an examination of the invalidity statistics showed that of all the male workers employed in the mining, metallurgy, and building trades, and who became invalided before 30 years of age, more than 50 per cent. were affected with pulmonary tuberculosis. It is instructive, therefore, to note the difference in behaviour of this disease in Prussia since the introduction of the sickness and invalidity insurance system, and the facts are set forth in the Local Government Board report upon sanatoriums.[1] It appears that up to the year 1886 or thereabouts the death-rate from tuberculosis in Prussia remained practically stationary at the high level of some 31 per 10,000 of the population, but since that year a rapid decline has taken place, and in the year 1907 the death-rate from this disease amounted to only about 16 per 10,000. The compulsory insurance against sickness came into operation at the end of 1884, and that against invalidity at the beginning of 1891. The difference between the tuberculosis death-rates of England and Prussia is remarkable and suggestive. In England this death-rate has been steadily declining for the last 50 years, whereas, so far as can be gathered from the official statistics, there was no decline whatever in Prussia prior to 1886–87. But the descent in the tuberculosis death-rate curve which then commenced has continued at a greater rate in Prussia than in this country, and if the two lines representing the respective death-rates be projected onwards it is clear that, assuming the same relative rates to continue, tuberculosis in Prussia will reach its vanishing point before the same happy consummation is attained in this country. The question, of course, at once arises as to how far this decline in Prussia is to be attributed to the sickness and invalidity insurance scheme. It is difficult to go beyond general inferences, but they must now be drawn and considered closely in connexion with the National Insurance Bill. Tuberculosis is largely a class disease, a malady of the poorer classes; its development is also in great degree a matter of diminished resistance. It has been said that consumption is a disease from which the rich sometimes, but the poor never, recover; and although this statement is obviously incorrect and might, in view of post-mortem statistics, be replaced by a truer statement that "the majority of those attacked by tuberculosis recover," nevertheless it is obvious that amongst *recognised* cases of this malady the chances of the recovery of the well-to-do are infinitely greater than those of the poor, who postpone medical assistance until it is too late, and who are unable to take advantage of the proper treatment for a sufficiently long period. The effect of the German sickness and invalidity insurance is to approximate the conditions of the poor to those which obtain among the better off, and, indeed, it might be said, having regard to the splendid spirit of discipline and loyalty which permeates the whole system that the German working man is in many ways afforded better advantages than the class immediately above him. Probably the greatest value of the German insurance scheme is, so far as tuberculosis is concerned, the fact that by its provisions treatment is commenced at an earlier period than is practicable without such a system. The workman is encouraged to seek medical advice early, and if it is necessary for him to enter one of the numerous sanatoriums erected or subsidised out of the surplus funds of the insurance system, adequate provision is made for his wife and children in order that he may be at no anxiety during his absence as to his family, and be in no hurry to relinquish the treatment until the maximum benefit has been obtained. In other words, the insurance system prevents sickness from resulting in poverty, misery, and economic ruin, and does not allow strength already enfeebled by sickness and suffering from still further deterioration owing to insufficiency of food.

The German system encourages early recognition of tuberculosis, and aids in a very practical fashion the erection and provision of sanatoriums, while the surplus funds are employed in improving the general sanitary conditions of the people and in promoting the erection of healthy dwellings for the working classes. A very substantial sum will be set aside under our National Insurance Bill for aiding the erection and maintenance of sanatoriums, and the formation of the county health committees, who are to have power to report defaulting local authorities to the Local Government Board, should, if skilfully handled, result in a material improvement in the conditions under which the poor live. The tuberculosis problem is only one of many tackled by the new proposals for legislation, but it is of great interest and importance, while the arguments which have been employed in connexion with this disease apply with almost equal force to all diseases the early recognition and treatment of which form the keynote of recovery.

[1] Sanatoriums for Consumption and Other Aspects of the Tuberculosis Question, by H. Timbrell Bulstrode, M.D. Supplement in Continuation of the Report of the Medical Officer for 1905-06. (Reprinted in 1909 from Cd 3657 of 1907.) Wyman and Sons, Fetter-lane, E.C. Price 5d.

Hospital Statistics of Disease and Injury.

AN interesting paper on the above subject, by Mr. M. GREENWOOD, jun., and Mr. R. H. CANDY, respectively the director and the late assistant director of the Statistical Department of the London Hospital, appears in the *Journal of the Royal Statistical Society* for March last. The paper summarises the results of statistical examination of the mortality attending fractures of the lower limbs on the one hand and cases of acute lobar pneumonia on the other, the data being derived from the records of large hospitals in Great Britain, in Germany, and in America. In this country the statistical history of the ordinary diseases (other than the infections), as well as that of the injuries that constantly occur amongst us, is extremely crude and incomplete. Even to hospital statistics this statement unfortunately applies, and yet it is to this source alone that the medical student must look for information on an important branch of professional knowledge. For in the ordinary text-book the statistics of fatality of disease are necessarily derived from the records of the great hospitals,

and when these data come to be criticised their insufficiency for statistical purposes is at once apparent.

At the Medical School of the London Hospital a system of clinical note-taking has been in vogue for the last 30 years, before which time the physicians compiled case-books for themselves. Some of these relate to the third decade of the last century and are still in existence, but they are statistically valueless, since they deal with but a small portion of the total admissions, the writers having naturally preferred to dwell upon cases of exceptional scientific interest. The object of the present investigators has been to obtain comparable data respecting one definite section of the community—viz., the "hospital population." In determining the character of this section two principles are involved. In the first place there is an economic selection, large groups of the public not being represented at all. In the second place there is the pathological selection, some forms of disease being over-represented and others under-represented in a hospital population, as compared with the community at large. In existing circumstances the choice was limited by the condition that for statistical purposes the disease or the injury in question must be fairly common and easily recognised, and, further, that it must be one which is always likely to be admitted to hospital on application. As might have been expected, many of the earlier records were found to be useless for analytical purposes. For example, under the head of "fever," many of the entries clearly relate to symptomatic conditions. Again, a large proportion of the entries refer to diseases (such as the various agues) which are now either extinct, or no longer epidemic in the poorer parts of London. In view of these considerations it was conjectured that the most suitable material for study would be found in the case of fractures of the leg or thigh as examples of injury; and of acute lobar pneumonia as a type of disease. It seemed to the investigators that, as the case mortality of both these groups is still appreciable, a study of their behaviour would throw light on the changes that have recently taken place in hospital treatment, as well as in the comparative resistance to injury and disease of the hospital type of patient, in so far as these can be measured by death-rates.

With respect to the first of these groups, we know that most of the cases of injury admitted to hospitals are the result either of street accidents or of falls. Many of the patients suffer from "shock," or from some grave internal lesion, in addition to a broken limb. Supposing death to follow in such a case it would not be in any real sense due to the local fracture, and the frequency of such deaths would throw no light upon changes in hospital treatment. As the inclusion of such accidents would be statistically inadmissible, all cases in which death occurred within three days of admission have been omitted from the present series. Although the investigators have taken pains to analyse the records of accident fatality, they are driven to the conclusion that the positive additions to our knowledge which have resulted therefrom are unimportant. The favourable changes recorded in the rate of mortality after fracture do not, of course, fully represent the improvements in hospital treatment, although there is reason to think that the percentage of serviceable limbs following the healing of a fracture is now higher than formerly. But in the absence of statistical data, we do not know how many of the patients returned as "cured" in the old times left the hospital actually lame for life.

In dealing with the statistics of pneumonia the investigators are careful to note that cases of lobar or croupous pneumonia alone have been considered, all records of broncho-pneumonia and of terminal pneumonia being as far as practicable excluded. And here it should be stated that no attempt has been made to ascertain the number of pneumonia attacks in the population, but only the deaths among pneumonia patients. The difficulty of infection does not arise here, since the whole "population" is infected. Climatic conditions markedly affect the prevalence of pneumonia; whether they also affect the case mortality is less certain. It is highly probable that variations occur in the virulence of this infective organism or its toxins. The actual incidence of pneumonia is generally stated to be heavier among males than among females, but upon this point the writers give no definite opinion. They, however, hold the belief that women of the poorer classes are specially reluctant to leave home when ill, since during convalescence they can still exercise some supervision over household affairs. They are more likely to remain at home than are their husbands, who, if confined to bed, can be of but little use in keeping house or in looking after the children. As a result of their investigations the writers consider that the following statements are justified. First, that the fatality of lobar pneumonia in the hospital class of patient has not appreciably changed in the last 50 years; secondly, that there is no evidence of sexual difference in the fatality rate of pneumonia; and lastly, that the apparently low rate of fatality among patients not treated in hospital is perhaps to a large extent due to differences in social class.

Annotations.

"Ne quid nimis.

THE MEDICAL PROFESSION IN INDIA.

IN another column appears a communication from a correspondent in India drawing attention to the fact that there is much discontent in the medical service in that country, and giving reasons for the existence of this dissatisfaction. We have on more than one occasion within the last year or two expressed our own opinion as to the wisdom of the policy, or what appears to be the policy, of the responsible authorities in regard to this matter. It is quite evident that the attractions which formerly caused entrance into the Indian Medical Service to be a matter of keen competition no longer exist. The number of candidates in recent examinations has fallen off, and in comparison with the competition for entrance into the Royal Army Medical Corps the conditions are now the reverse of what had always been the case until the last year or two. The Indian Service now appears as the less attractive of the two. We think, however, that our correspondent somewhat exaggerates the pecuniary disadvantages. If the present cost of living be, as he states, twice as much as in former days, and the purchasing power of the rupee only half what it was, the unfortunate Anglo-Indian of the present generation would be virtually,

from a pecuniary standpoint, only one-quarter as well off as formerly. Against this the only set-off that is admitted is an increase of pay averaging 10 per cent. We cannot think that this accurately represents the relative pecuniary conditions of service at the present time compared with, say, 15 or 20 years ago. Our objections to what we understand to be the present policy of the Indian Government are the result of a conviction that, if the important civil surgeoncies throughout the country, professorial chairs in the universities, and similar civil appointments of dignity and emoluments are no longer to be considered as open to, or to be mainly recruited from, the Indian Medical Service, the attractiveness of this service, and therefore the quality of the professional men who choose it for a career, will be appreciably diminished. The evil effects of such a contingency would reach far beyond the ranks of the Indian Medical Service, and could not fail to be felt throughout all branches of the Indian administration. We incline to think that it is on this ground—the materially diminished prospects of professional advancement—rather than the insufficiency of the present rates of pay, that the conditions of service under the Indian Government must now be considered as unsatisfactory and unattractive. That the competition for entrance has now sunk to be merely nominal is a grave matter, demanding, and no doubt receiving, the attention of the India Office, in conjunction with the governing authorities in India. It is quite certain that something must be done to reinstate the Indian Medical Service in the position it formerly enjoyed, as a career capable of attracting some of the best young medical men in this country. On this point there can be no difference of opinion amongst those who are acquainted with the facts.

CLEANING THE FO'C'SLE.

THE President of the Local Government Board, when dining recently with the Chamber of Shipping, with a directness unusual in a Cabinet Minister, impressed on the members how important it was they should themselves improve the food, pay, and conditions of life of their seamen, if they would avoid Parliamentary interference. He pressed his point home by statistics which showed that in the last 20 years the death-rate had been halved in the Army and the Navy, had been decreased nearly as much in civil life, but remained almost unaltered in the Mercantile Marine, and he asked them to bear that in mind when sanitary authorities made suggestions. These are very encouraging and helpful words coming from a Cabinet Minister, and Mr. Burns can best advance the cause of the seamen by adopting the method recommended by the Royal Sanitary Institute at its Brighton Congress last year. The requirements of the Board of Trade as regards the accommodation for the men of the crew refer only to cubic and floor space, and it is not till a ship is built that her sanitary arrangements come under review by an expert. At the first port to which she is sent to load she is examined by the local sanitary authority, whose representative may discover in her construction insanitary arrangements that must be altered—a cause of loss, delay, and annoyance to her owners, which might have been avoided had the plans of the ship been examined previous to her construction and passed by some sanitary expert, as are the plans of new houses. Tuberculosis is very prevalent among merchant seamen, and that in part no doubt because of their bad conditions of life on board. By the Merchant Shipping Act of 1906, sailors have 120 cubic feet each, instead of the old 72 cubic feet, in all ships built after that year, and 15 square feet of floor space instead of 12. That is a great improvement, and others are being made by the shipowners every day, though very slowly. The crying needs of sailors are better forecastles, bath-rooms, and better water-closets. Water-closets with constant flush should be provided in deck-houses, so constructed and lighted that it is possible to keep them clean. And in steamers there should be baths with hot water so that no fireman need go filthy into the forecastle. As to the forecastles themselves, it is better that they should be placed at the stern, and this is becoming more and more common. But few forecastles are there which are not crowded, damp, dark, and dirty—damp and dirty because they are crowded and dark, and moreover ill-ventilated and insufficiently warmed. They are better than they were, but the window area is often only 1-80th of the floor space (the model by-laws ask for 1-10th in houses). What light did enter from the side was apt formerly to be intercepted by the wooden bunks, but these are now being replaced by iron, with the result that forecastles are less dark than formerly. But overhead light is required in order that the dirt may be seen and the forecastle cleaned. Electric light is becoming common, and radiators and ventilating fans will come in time. It must be recognised that the ordinary workman is able to do the day's work he achieves because there is a woman cleaning up at home and cooking for him. In ships a cook is provided for the seaman, but his equally urgent need for someone to clean his house has not yet been realised. That will come, too, when it is seen that a man who has kept the morning watch from 4 A.M. to 8 A.M., and perhaps spent two hours out of that at the wheel, cannot be expected to do more than get his breakfast before he turns in and takes the sleep he needs. In time owners will learn that it pays them to provide bath-rooms and a man to clean the forecastle each side, and that they will win their money back in the better health, better humour, and more efficient work of their crews. On Dec. 31st, 1910, it was agreed in Australia that for the next three years firemen were to be paid £9 10*s.* a month, able seamen £7 10*s.*, in all ships sailing exclusively between Australian ports. In this country the rates are £4 and £5 a month, so there ought to be something over somewhere for sanitary improvements.

ETHER AND ELECTRICITY.

"GIVE me matter and motion," said René Descartes in the earlier half of the seventeenth century, "and I will construct the universe." Descartes regarded the world as an immense machine operating by the motion and pressure of matter. He rejected all forms of action at a distance and assumed that force cannot be communicated except by actual pressure or impact. According to the Cartesian view, the vehicle of light was a closely packed assemblage of globules able to transmit pressure, and the effect of the pressure was light. In regard to colours they were connected with different rotatory velocities of the globules, the particles which rotate most rapidly giving the sensation of red, the slower ones of yellow, and the slowest of green and blue—the order of the colours being taken from the rainbow. The Cartesian system has broken down, but we may be grateful for the stimulus it gave to the spirit of research and for the fresh school of thought which it founded. Hooke with his ether-vibration theory followed Descartes, and then came the great philosopher Newton, who objected to the theory on what were then reasonable grounds, but what enormous developments have arisen out of the theory of waves later improved and extended by Christian Huygens! "Until the seventeenth century," writes the Royal Astronomer of Ireland, Professor E. T. Whittaker, F.R.S.,[1] "the only influence which was

[1] A History of the Theories of Æther and Electricity from the Age of Descartes to the Close of the Nineteenth Century, by E. T. Whittaker, Hon. Sc.D. Dubl., F.R.S.; Royal Astronomer of Ireland. London: Longmans, Green, and Co. 1910. Pp. 475. Price 12*s.* 6*d.* net.

known to be capable of passing from star to star was that of light. Newton added to this the force of gravity; and it is now recognised that the power of communicating across vacuous regions is possessed also by the electric and magnetic attractions. It is thus erroneous," he proceeds, "to regard the heavenly bodies as isolated in vacant space; around and between them is an incessant conveyance and transformation of energy. The ether is the solitary tenant of the universe save for that infinitesimal fraction of space which is occupied by ordinary matter." The theory goes further and bids us know that ether is as essential to us as the air we breathe, and without the ether we die. When we remember that we on this earth are dependent from minute to minute upon what we are getting from the sun, and that the gifts of the sun are handed on to us by the ether, all scepticism on the point of the necessity of its existence, whatever in fact it may ultimately prove to be, must disappear. What an enormous traffic of energy passes through the etherial streets is seen from the calculation that the heat received by the earth under a high sun on a clear day is equivalent to 7000 horse power per acre. Of electricity Priestley in 1766 asked: Is there any electric fluid *sui generis* at all, distinct from the ether? And Maxwell, having demonstrated that the propagation of electric disturbance resembles that of light, replied 100 years later, "We can scarcely avoid the inference that light consists in the transverse undulations of the same medium which is the cause of electric and magnetic phenomena." The development of the subject has proceeded apace, and radioactivity and the theory of electrons have now to be connected with the mysterious ether. "The hypothesis of atomic electric changes," writes Professor Whittaker "has been, to all appearances, decisively established, but all parts of the theory of electrons," he adds, "do not enjoy an equal degree of security, and in particular it is possible that the future may bring important changes in the conception of the ether." The great Newton's view in regard to the improbability of reaching finality in scientific research is thus again endorsed, but progress is worth recording.

THE IMPORTANCE OF GOOD PAPER.

WE may well be jealous of the quality of the paper on which some of our most precious records are kept. In this age of enormous demand, production, and cheapness the inferior article becomes strongly in evidence, and great care is needed in order to select the paper which shall give, humanly speaking, the permanent record, or one which, at all events, shall not so deterioriate as to fail a comparatively few years hence to preserve the impression clearly upon it. Recent investigations have shown that a common impurity of paper is free acid derived from over-bleaching or from impure alum. Both are destructive to the lasting qualities of the paper, and though at the beginning it may appear a stone white, eventually it resolves into a yellow or brown. The subject is one of considerable importance, having regard to the value of preserving manuscripts or printed matter with valuable records upon them in our archives. It affects all classes of literature alike. Law, the sciences and arts, the industries, medicine, each may lose its history, or part of it, in the decay of defective paper. Fortunately, the defects in paper intended for recording purposes are easily detected. If a solution of potassic iodide be placed upon a paper containing uncombined alum and starch and exposed for an hour or so and protected by a glass cover from the air it is stained a reddish or violet brown; if there is alum present and no starch the stain is a bright yellow. It happens that the starch in the paper, which is harmless, renders the test more distinct by forming with the liberated iodine a violet colouration. In the absence of starch some may be added to the iodide before testing. If the paper gives a decided answer to this test it is utterly valueless for the purpose of giving a permanent record. If this simple test were generally borne in mind and practised the effect upon the paper-maker would in all probability be a wholesome one, and we should be more sure of securing our valuable records for all time.

COMPLIMENTARY DINNER TO MR. BUTLIN.

ON the initiative of the Metropolitan Counties Branch of the British Medical Association a complimentary dinner to Mr. Butlin, the President of the Association, has been arranged to take place on June 13th next. A dinner committee has been formed with Dr. Lauriston Shaw, the President of the Metropolitan Counties Branch, as chairman, with Dr. Hugh Ker as treasurer, and Mr. D'Arcy Power and Dr. William Griffith as honorary secretaries. The dinner will take place at the Connaught Rooms at 7.30 P.M., and the price of the dinner ticket, exclusive of wine, has been fixed at half a guinea. It is hoped that everyone who desires to be present will make immediate application to the honorary secretaries, Butlin Dinner Committee, 429, Strand, W.C.

INFECTION OF THE BLADDER WITH THE PENICILLIUM GLAUCUM.

INFECTION of the bladder is very rarely due to yeasts or moulds. In the *Boston Medical and Surgical Journal* of March 23rd Dr. Arthur L. Chute has reported the following case in which the infecting organism was the common mould, Penicillium glaucum. A woman, aged 61 years, the mother of three children, came under observation. She gave a history of bladder trouble for three years which began with symptoms of acute cystitis. After a year she underwent operation for cystocele, rectocele, and a small urethral caruncle. As she obtained little relief, her condition was regarded as largely neurotic, and she was told to disregard her symptoms. This she did for a considerable time, but had again to seek treatment. Under ether the urethra was dilated, and nitrate of silver was applied to the bladder on three occasions during the four months before she came under observation. This treatment gave a good deal of temporary relief, once for nearly five weeks, but the symptoms—painful and frequent micturition—then returned. It had been noticed for some time that the urine contained little white masses which floated on the surface. On examination it was found that she did not completely empty her bladder. The urine contained a trace of albumin. The bladder held 4 oz. of fluid, was diffusely red, and had lost its normal markings. At its apex were some brilliant white masses irregular in shape. At first they were regarded as phosphatic concretions on a new growth. There were also a few white patches on the lateral walls. The white masses in the urine felt greasy when rubbed between the fingers. They could not be satisfactorily stained with ordinary aqueous stains, but stained on heating with carbol-fuchsin. They were made up mostly of amorphous material, but contained some rounded tufted bodies in which little dark vacuoles could be seen. There were also collections of bodies which looked like cocci but were too large for this and varied in size. No definite bacteria could be recognised and there were few pus cells. The white masses were soluble in ether, and burned on a loop with a snapping sound like that often produced by fatty substances. A second cystoscopic examination showed that the masses at the top of the bladder were moveable. It seemed evident that there was a very stubborn infection of the bladder by some yeast or mould. Suprapubic cystotomy

was performed and much white material and oily fluid was skimmed off the surface of the distending fluid and preserved aseptically. The mucous membrane was lightly rubbed with gauze and a drainage-tube was inserted. The preserved material showed in a few days a considerable growth of an ordinary mould, which was identified by Dr. Henry Perry as the Pencillium glaucum. Cultures on agar yielded a yellowish oily fluid like that found in the bladder. It seemed that the white substance containing spores found in the bladder was due to solidification of this oily material in contact with water. The fact that the patient did not empty her bladder accounted for the difficulty in getting rid of the infection. The progress of the case was uneventful and the suprapubic opening was allowed to close after four weeks. The patient could then empty her bladder completely, and examination failed to show the presence of any white masses or oily fluid. A subsequent report showed that she was free from symptoms. The only similar case which Dr. Chute could find recorded is one reported by von Frisch in which a woman in the sixties had symptoms of acute cystitis. There were considerable residual urine and marked hæmaturia. In the urine were little white bodies, of the size of a hemp seed, some of which floated while others sank. The floating ones were found to contain minute bubbles which buoyed them up. When allowed to stand the bubbles disappeared and the particles sank. The white bodies were made up of masses of mycelium. There were also yeasts and colon bacilli. The gas in the urine was found to be carbonic acid and was due to the action of the yeasts on sugar, which the urine contained in amounts varying from 2 to 4 per cent. Cystoscopic examination showed the same dazzling white masses as in the previous case. The mycelia and symptoms disappeared in a few days after irrigation with nitrate of silver solution, but the bacterial infection persisted during the four weeks that the patient was under observation.

THE SCOTCH CENSUS.

HAVING regard to the marked increase of emigration in recent years, and to the steady decline in the birth-rate, it is scarcely surprising that the results of the Scotch Census should show a considerable decline in the rate of increase of population during the past ten years. The total population of Scotland enumerated last month, according to the preliminary return issued by the Registrar-General for Scotland, was 4,759,521, showing an increase of 287,418, or 6·4 per cent., on the number returned at the previous Census in 1901. In the intercensal period 1891–1901 the recorded increase of population in Scotland was 447,456, and equal to 11·1 per cent. The rate of increase in the population of Scotland during the last decade was therefore but little more than half the rate that prevailed in the preceding ten years. The decline in the rate of increase of population in the largest Scotch towns is, however, still more remarkable. The aggregate population of the eight principal towns in Scotland, which was 1,668,444 in 1901, had increased to 1,708,833 at the recent Census, equal to but 2·5 per cent., whereas in the ten years 1891–1901 the increase in the same towns had been equal to 14·3 per cent. The extent of this decline in the rate of increase of population in the largest Scotch towns is quite remarkable, and appears to suggest a decline of commercial prosperity. It is specially noteworthy that while the rate of increase in the eight principal towns was only equal to 2·5 per cent., the rate of increase in the population of Scotland, exclusive of these eight towns, was 8·8 per cent. Although the mean density of population in these eight towns at the recent Census did not exceed 37·5 per acre, it is very probable that some increase of population has occurred outside the fixed boundaries of these eight towns; the Census figures, however, imply a recent marked decline in the rate of town aggregation from rural districts—at any rate, to the largest towns. The results of this Scotch Census point once more to the pressing need for more frequent enumerations of the population of the United Kingdom. The Registrar-General's estimate of the population of these eight principal Scotch towns in the middle of this year, based upon the presumed maintenance of the rate of increase that prevailed between 1891 and 1901, was 1,917,875, and exceeded the number recently enumerated by no less than 209,042, or 12·3 per cent.; the official estimates exceeded the Census numbers by 112,523 for Glasgow, by 44,410 for Edinburgh, by 26,239 for Aberdeen, by 10,661 for Paisley, and by smaller amounts in each of the other towns except Greenock, the estimate for which was slightly below the Census number. It is more than probable that the Census returns for England and Wales, when published, will show similar wide discrepancies between the official estimates and the Census figures, and will thus accentuate the need for at any rate a quinquennial Census in the United Kingdom. It scarcely need be pointed out that the remarkable overestimates of the population of these principal Scotch towns have resulted in a considerable understatement of the official rates of mortality (as well as of the birth and marriage rates) in recent years, and have thus depreciated their value and influence by creating a too favourable impression of the sanitary condition of the eight towns. The rapidly increasing expenditure of public money on the calculation and publication of national and local vital statistics, and their invaluable influence on public health administration, if the statistics are trustworthy, point urgently to the necessity for more accurate information of local populations in post-censal years, especially in towns, than can possibly be derived from decennial censuses.

THE MENTAL NURSE.

THE address by Dr. Robert Jones at the Nursing and Midwifery Conference last month on Mental and Sick Nursing: a Retrospect and a Prospect, contained many passages of interest, as may have been gathered by our brief report of it.[1] One point which he made, and upon which particular stress may be laid, was that the successful asylum nurse must also be a good general hospital nurse. The same qualities of mind and heart are required in each, and the sooner this is widely recognised the better will it be for the mental nurse herself and for her patients. An asylum nurse often has to perform all the duties of a general hospital nurse, including attendance at major operations, in addition to her ordinary duties, and Dr. Robert Jones suggested the desirability of more frequent interchange of work between hospital and asylum nurses. All the tendency of modern medicine is towards this sort of consolidation of service. It is estimated that at the present time there are nearly 14,000 nurses and attendants in the United Kingdom engaged in the service of the 174,000 patients in the various asylums for the insane. Most insane patients have a curiously quick and penetrating insight into the character of their attendants, and the mental nurse is lost without tact, kindness, and interest in her work. And above all she must possess self-control, which is the beginning and the end of management of the insane. A first-class strong, sane nurse is thus an important factor in the recovery of many cases of mental disease. Although the mental nurse, like every

[1] THE LANCET, April 15th, p. 1023.

other kind of nurse, is born, not made, training can do much for her, and the recommendation that every person who proposes to undertake the care of the insane should obtain the certificate of the Medico-Psychological Association will receive general support. The enormous advance which has taken place in general hospital methods during the past generation or so has been accompanied by an equally striking improvement in the care of the insane. The whole attitude, first of the medical profession, then of the intelligent section of the public, has gradually changed towards insanity and towards the insane person. The old barbarous ideas and methods have been abandoned, and insanity is now treated as a disease and not as a possession by demons or a sheer outburst of temper. The aim of asylums nowadays is to give the patients home-like surroundings and sympathetic attention. And most essential, perhaps, of all means towards recovery, every effort is made to interest the patient in some form of work to which his tastes incline him. This advance in our attitude towards insanity and its treatment has brought about an improvement in the type of attendant upon the insane, and future progress in the therapeutics of mental disease will depend largely for its practical success on the intelligent coöperation of skilled mental nurses.

THE DISSEMINATION OF TUBERCULOSIS.

IN these days of multiplying anti-tuberculosis societies, disseminating anti-tuberculosis literature broadcast, a paper on the Prevention of Tuberculosis for medical men which contains nothing absolutely new might seem superfluous. Yet there are ways of coördinating information and so presenting it as to make it more easily assimilable—a sort of opsonic treatment of knowledge—and we find an example of such treatment in a paper on the Prevention of Tuberculosis by Professor D. A. Welsh of the University of Sydney. Professor Welsh points out that the many obstacles to the overthrow of tuberculosis all arise from one or more of three well-defined attitudes of mind—ignorance, carelessness, and selfishness. The first two are self-evident in all their manifestations. The last is exemplified when fads and fancies are clung to which conflict with precautions that we know ought to be taken. Even medical men entertain a reluctance to enforce restrictions on their own patients, and allow them little liberties that they would condemn in the case of others. As to the question of ignorance, Professor Welsh divides the source of infection to be guarded against into two classes—dangers arising from infection by bacilli of human origin and those arising from infection by bacilli of bovine origin. In regard to the first, he points out that the full realisation of the forms in which discharges from the human body may be infective, and the infective agent therein transmitted, calls for imagination—scientific imagination—so that we can picture in our minds the paths that may be travelled by the bacilli from an infected to a healthy person. He discusses the disposal of sputum, and calls attention to the fact that even when the rags into which the patient spits are destined to be burnt, pockets and hands may be contaminated unless care is taken during the interim. He advises in preference always to spit into a vessel containing a disinfectant. He lays stress also on the almost invisible spume that is projected from the mouth in coughing and speaking, the infectiveness of the fluids of the mouth, which may be transmitted by the cup, the spoon, the fork, the towel, the sheet, to say nothing of the envelope, the postage stamp, the kiss—to which we would add the dirty habit of putting money in the mouth and the licking of the thumb to turn over pages, and many more that the "scientific imagination" can call to mind. Then there is the tendency of the medical man to euphemise about lungs being "a little weak," out of consideration for the patient's feelings and those of his friends, instead of definitely asserting tuberculosis and insisting on proper precautionary measures. Then, too, note is not sufficiently taken that the fæces commonly contain tubercle bacilli, even when none can be detected in the sputum, and even when there is no expectoration. The urine, sinuses from diseased bone or glands, and patches of lupus may all disseminate bacilli, and we must call scientific imagination into play to realise the many activities that may be the means of transmitting them from these sources. But it is when he comes to speak of the dangers from bovine infection that Professor Welsh is most forceful. He analyses the evidence called forth as a result of Koch's startling dictum in 1901 that human and bovine tuberculosis were not interchangeable. This evidence, Welsh says, tends to show that bovine tubercle bacilli are not uncommonly the agents which infect man, that they are highly virulent to children, and that they are conveyed in cow's milk. It is possible to distinguish tubercle bacilli of bovine origin from those of human origin under the microscope, in culture media, and on inoculation of animals. We are, therefore, enabled to assert positively that bacilli having all the characters of the bovine type have been isolated from tuberculous lesions in man; and Welsh suggests, as probable, that the number of human lesions originally due to bovine infection is even higher than is at present known, for bacilli introduced as bovine forms may have taken on the human type as the result of successive cultivations in the human body. The evidence on this point is not beyond dispute; but there is all the weight of *a priori* possibility in its favour. Professor Welsh discusses at length the paths of infection, and considers that while all mucous membrane is vulnerable, perhaps the most vulnerable point is the tonsillar region, which is in direct line of both respiratory and alimentary introduction of the bacillus. He insists on the importance of heating all milk, and considers the simplest method to be the best—namely, to raise all milk to the boiling point and then allow it to cool, taking care to keep the vessel covered so that no "skin" is formed to protect the bacilli therein contained against the full effects of the heat. Prolonged boiling he holds to be unnecessary. If all the disadvantages (real and imaginary) due to heating are put against all the dangers due to not heating, the balance appears to him largely in favour of heating the milk. A general refusal to drink unheated cows' milk would be a great step in the prevention of tuberculosis. Tuberculosis has, according to Mohler and Washburn of the Bureau of Animal Industry, Washington, been practically stamped out in a community of pigs, which, like children, are susceptible to bovine bacilli and are commonly infected by cows' milk, with a similar selection of tissues for the lesions. Denmark some years ago set the example of protecting pigs. Professor Welsh suggests that children should enjoy the same advantages.

ASSOCIATION DES ANATOMISTES.

THIS association, which has members from most European countries, though chiefly constituted by members of the French-speaking races, recently held its thirteenth *réunion* in Paris, under the presidency of the veteran zoologist, Professor Y. Delage. A pleasant meeting took place on the evening of April 9th, when many old friendships were renewed and new acquaintances made. Work began at the early hour of 9 A.M. next day, the forenoon being devoted to the reading of papers, lantern demonstrations, and discussions. As a matter of fact, very few of the contributors actually read their communications. They preferred to speak them, mostly without notes. The afternoons were devoted to microscopical demonstrations to illustrate the papers. About 40 communications were given and 10 special demonstrations.

An analysis of the communications reveals the striking fact that naked-eye anatomy was represented by only one or two communications, all the rest being devoted to histology—a fact which shows the direction of anatomical study in the French schools. Amongst the few purely anatomical papers we may refer to that of M. Villemin of Nancy, who described the presence of a hitherto unknown "valve" at the duodeno-jejunal junction which may be called the "valve of Villemin." Several communications were made on "spermatogenesis" and allied subjects by Branca, Regaud, and others; and amongst these were several dealing with the effects of X rays on the testis, X rays on the ovum and the ovary. Regaud and Cremieu describe the effects of X rays on the thymus; Dustin demonstrated grafting of the thymus and its results; while Mavas indicated new points on the structure of the thyroid. One of the most important communications in this group was that of Ancel and Bouin of Nancy, who described the existence and evolution of a new series of glands of the endocrine type, which exists in the myometrium—i.e., in the muscular wall of the uterus in pregnant rabbits. Grynfeltt gave a most interesting account of the gland that secretes the purple secretion in Murex trunculus. There were several communications on the histology of the nervous system and on muscle and on general cytology, but with no outstanding new results. The communication of Professor Julin of Liège on the development of the luminous organ in pyrosoma from its first appearance in the egg was one of the most striking and important of the whole series. Two of the regular attendants at these congresses were much missed, viz., Professor Waldeyer of Berlin and Professor Romiti of Pisa, who was *facile princeps* the orator of the society. The next meeting of the society will be held at Rennes.

THE PROGRESS OF THE EGYPTIAN GOVERNMENT SURVEY OF NUBIA.

WE have already had occasion to notice in our columns the periodic bulletins, as well as the voluminous first annual report,[1] of the survey of Nubia undertaken by the Egyptian Government. This survey, which was started in 1907, is now nearing its close, and so fruitful has the field proved that throughout the whole of three seasons' work the interest of the investigations has never slackened. The extraordinary wealth of material unearthed for the anthropologist shows no signs of diminishing as the expedition pushes further south, and every fresh cemetery that is opened sheds new light on the bygone life of these ancient Nubian peoples, or confirms the deductions drawn from the graveyards excavated earlier in the survey. A new page of history is being patiently and scientifically displayed. The survey has been working upon the unknown, and its unimpeachable methods of investigation, as detailed in the first annual report, give an importance to its findings both for the archæologist and the anthropologist which is almost without parallel in work of this kind. It is well for the anthropological side of this survey that one master-hand has been able to guide its destinies throughout, and that Professor Elliot Smith, although his connexion with Egypt is otherwise severed, still directs the work. First, in association with Dr. Wood-Jones, and later with Dr. Douglas E. Derry, he has been responsible for the ordering of all the anatomical work and the issuing of publications, of which Bulletin No. VI., dealing with the field work done during January and February, 1910, has recently appeared. The fact that this bulletin deals with cemeteries Nos. 101 and 102 shows the extent to which the work has been carried and the enormous bulk of material upon which the findings of the authors are now based. To the anthropologist as well as to the historian the greatest interest of this present volume lies in the discussion of the gradual broadening of the cranium which has been noticed by many observers to take place in the representatives of successive dynasties in Egypt. This same development of the breadth of the head is seen also in crania from sites in Upper Egypt and Nubia, with the difference that, period for period, the Lower Egyptian skull is broader than that from a contemporary Nubian cemetery. It is obvious that this gradual development might be assigned either to a steady evolutionary advance in the culture and the physical type of the people, or to a gradual infusion of the blood of some race possessing the type of cranium which is seen in the making throughout successive periods. Professor Elliot Smith, for a multitude of reasons, has decided that the latter is the correct interpretation, and he has shown that the change noted in the cranium was accompanied by a series of minor modifications in other parts of the skeleton. Egypt has for all time been a sponge, absorbing blood from the Mediterranean basin in the north and from the negro countries in the south; and yet with all its assimilation of new elements the type of its peoples throughout successive dynasties has altered marvellously little. The infusion of the new alien type from the north has, however, left its stamp upon certain definite skeletal features, and these are now for the first time traced out among the representatives of different periods and different districts. Nubia, isolated and "wretched" as it always has been, felt the influence of this infusion long after it had established itself as a permanent hall-mark upon the people living further to the north and nearer to routes of commerce and colonisation. Throughout all the stages of this survey careful attention has been paid to the manifestations of those diseases which leave a trace of their ravages upon the bones. This bulletin adds still further to our knowledge of the diseases of the ancient populations of the Nile valley. An example of a condition which, despite the absence of bacteriological confirmation, is almost certainly leprosy, as well as two which are malignant, and several pronounced by Professor Lorrain Smith to be tuberculous, have been described and preserved. Besides these manifestations of disease other examples of the bizarre effects of violence, in the discovery of which this expedition has been so fruitful, have been met with and catalogued. A series of photographs of various types of skulls, and of the results of injury and disease of bones, completes this last addition to the valuable list of publications of the Egyptian Government in connexion with the survey of Nubia.

[1] THE LANCET, Jan. 7th, 1911, p. 41.

RECURRENT SCARLATINIFORM ERYTHEMA ASSOCIATED WITH PHTHISIS AND THROMBOSIS OF THE FEMORAL ARTERY.

How far in the various types of recurrent cutaneous exudation are the phenomena due to the action of a specific provocative factor? Are they not rather the outcome of individual variations in capillary permeability, a form of susceptibility laying its owner open to attack by sundry poisons? Such reflections are prompted by a survey of some of these cases; that recorded in the *Revue de Médecine* for April by E. Devic and Ch. Gardère is an example. Briefly, the clinical history is that of a woman admitted to hospital at the age of 28 for pulmonary tuberculosis and remaining under observation for a year and a half, during which time there occurred five attacks of scarlatiniform erythema. Each attack was ushered in by prodromal symptoms, headache, chill, vomiting, and rise of temperature. The rash, spreading rapidly over the whole body after appearing on the face first, was scarlatinal in type, and gave place about the fifth day to a vigorous desquamation which lasted about 12 days. Each outbreak of erythema

was accompanied by miliary vesicles which became pustular and, in the final attack, hæmorrhagic. The final attack was in every way graver than those which had gone before, and particularly so because of the lesion which accompanied it, thrombosis of the femoral artery with gangrene of the lower limb. After death a patch of aortitis was found, and the parenchyma of the liver and kidneys showed cloudy swelling. In both lungs there were tuberculous areas with excavation; but there was nothing to point to an aggravation of the tuberculous process as a cause of the terminal phase, which the writers are constrained to ascribe to some secondary infection. They give an interesting summary of the diagnostic difficulties in which the observer of these scarlatiniform rashes may be involved, and they review briefly the scanty knowledge we possess as to their etiology. It appears from this that in individuals predisposed to such disorders an attack may be precipitated by a variety of intoxications, bacterial in some instances (acute rheumatism, enteric fever), chemical in others, as in the various drug rashes of this type; and they believe that there is no essential difference between single and recurrent attacks of scarlatiniform erythema.

ALIENS AND TRACHOMA.

ON the six working days from April 18th to April 24th 94 separate cases of trachoma were treated in the third house surgeon's room at the Royal London Ophthalmic Hospital. The number does not necessarily represent the total number of cases of trachoma treated in the hospital during that period. Steps are being taken to obtain reliable statistics over a larger period, but it would appear that the introduction of the Aliens Act has had no very appreciable effect upon the number of cases treated at this hospital. Probably far more trachomatous aliens are treated there and at the London Hospital than anywhere else in England. As pointed out in the *Times* of April 11th, trachoma "has been responsible for the rejection of the bulk of the alien immigrants who have been refused permission to land on medical grounds since the passing of the Act of 1905. It is in a still larger degree the chief ground on which transmigrants have been rejected as undesirable by the shipping companies at the ports of departure in the United Kingdom. Sufferers from trachoma are rigorously excluded from the United States, British North America, South America, and South Africa—the four leading destinations of the transmigrants; and whether they have been rejected here or abroad the Act forbids them to remain in the United Kingdom except in circumstances approved by the Secretary of State. The Act has been in operation for so short a period that complete statistics can be given for the sake of comparison. The following table shows the number of immigrant aliens rejected on medical grounds and the number of cases in which trachoma was the cause in the years 1906–1909:—

	Rejected.	Trachoma.
1906	133	52
1907	398	257
1908	250	116
1909	451	238

The following table gives similar information about the transmigrants:—

	Rejected.	Trachoma.
1906	1419	Nearly every case.
1907	710	674
1908	266	248
1909	494	455

The figures for 1910 are not yet available in their final form, but those that have been given will show the extraordinarily high percentage of trachoma cases in the rejections and the curious way in which the totals vary from year to year. The existence of this class of rejected immigrants has given rise to practices which the powers of the Aliens Act have not proved sufficient to stop. In 1909 about 400 Armenians and Syrians bound for America were rejected at Marseilles, chiefly on account of trachoma. They were induced to come to the United Kingdom by agents in this country, who assured them that they would find no difficulty in securing a passage across the Atlantic, and even represented that, where necessary, they would be cured of their diseases. Of course, no British line would accept them as passengers, and they were shipped back to the continent, where their troubles almost certainly began again. Unscrupulous agents of the kind alluded to are constantly trying to smuggle these unfortunate people into England. When they are discovered they are sent back to the continent, and there have been cases in which they have been travelling from one country to another for upwards of six months without any possible chance of ever being allowed to land at their destinations. This shameful traffic cannot be entirely suppressed by the powers conferred on the Home Office by the Aliens Act, and it is through channels like this that trachoma may spread in this country. Another practice which more rigorous anti-alien legislation would bring to an end is the 'doctoring' of some of these sufferers with a view to tiding them over the period occupied by the voyage and the examination on the other side of the Atlantic. Men who make a living in this way are to be found at most of the ports." The reports of the visiting ophthalmic surgeon (Mr. E. Treacher Collins) to the ophthalmic schools of the Metropolitan Asylums Board at Brentwood and Swanley afford very valuable statistics. The percentage of trachoma cases in the total admissions for the years 1907–8–9 is 16·3, 19·2, and 17·6 respectively. The average stay of 87 trachoma cases discharged in 1909 was 26 months. In the White Oak School, Swanley, there were 81 cases of trachoma in 1909; at the High Wood School, Brentwood, 24 cases. At the latter school one nurse contracted trachoma in the course of the year. The report gives a table showing the parishes or unions from which the cases were derived. The following table shows the number of trachomatous children admitted and discharged cured since the schools were opened:—

Year.	Admitted.	Discharged cured.
1903	292	64
1904	200	82
1905	141	100
1906	115	103
1907	82	88
1908	94	96
1909	113	76
1910	122	90

It will be seen that the trachoma cases in 1909 and 1910 showed increase. In 1908, however, the percentage of trachoma cases in the total admissions was higher than in the preceding year—i.e., 19·2 per cent. in 1908, as compared with 16·3 per cent. in 1907. If only children coming from the metropolitan parishes are taken, the numbers admitted each year from 1904 to 1910 inclusive are 159, 136, 109, 76, 89, 96, and 113. The outstanding features of these statistics are the enormous influx of persons suffering from a contagious disease which is so extremely rare as to be almost unknown as an indigenous disease, and the chronicity of the complaint which makes cure a matter not of days or weeks but of months and years. If to these facts be added the disability and even blindness which results when the cases are untreated or inefficiently treated, it will be seen that Mr. H. L. Eason, the senior ophthalmic surgeon to Guy's Hospital, did good service in bringing the matter before the Hospital Saturday Fund at its recent annual meeting. Only by such means can the seriousness of the menace to our population be brought

home to politicians who have the power to control the influx of undesirable aliens.

THE next session of the General Medical Council will open on Tuesday, May 23rd, when the President, Sir Donald MacAlister, K.C.B., will take the chair at 2 P.M.

Dr. Henry Head will deliver the Croonian lectures upon "Sensory Changes from Lesions of the Brain" before the Royal College of Physicians of London on June 13th, 15th, 20th, and 27th, at 5 P.M., at the College, Pall Mall East. Dr. Head wishes to announce that the whole of the work upon which the lectures will be based has been carried out in conjunction with Dr. Gordon Holmes.

THE Royal Commission on the Poor-laws and Relief of Distress have recommended that "a local authority should not be allowed to appoint an ex-member as a paid officer unless he or she has ceased to be a member of the local authority for a period of, say, 12 months before appointment." The Local Government Board are in agreement with this view, and most medical men will recognise the impropriety of appointing to paid offices persons who are or have recently been members of the authority.

THE annual general meeting of the Asylum Workers' Association will be held at 11, Chandos-street, Cavendish-square, W., on Wednesday, May 24th, at 2 P.M., Sir William J. Collins, M.D. Lond., F.R.C.S. Eng., president of the association, in the chair. The annual report will be submitted, officers elected, and presentations made of medals for long and meritorious nursing service. As matters of much importance to asylum workers will be discussed it is hoped that there will be a large and representative gathering of members and friends of the association.

THE NATIONAL INSURANCE SCHEME: THE PRUSSIAN OFFICIAL TARIFF FOR MEDICAL ATTENDANCE.

BY G. P. FORRESTER, F.C.S.

THE National Insurance Scheme laid before the country by the Chancellor of the Exchequer inaugurates a new era in the history of our social reforms, and will be called to take a leading position among the many legislative measures introduced during the past 100 years with the aim of safeguarding the worker from many of the unwelcome sequelæ of a highly developed industry and of ensuring that he shall work under regulated conditions and in surroundings designed to protect his health to the uttermost limit—measures which are recognised to be the best of their kind. Those who are from personal knowledge acquainted with the working in actual practice of the German scheme of insurance against sickness will note with pleasure that the British scheme skilfully avoids many of the defects which have come to light in the course of years in the German system, and which the Bill at present before the Reichstag is designed to remove; this is evidence that the Chancellor has profited by the experience collected on the other side of the North Sea, and contains an assurance that the mistakes made in the beginning by not defining sharply the relations of the medical practitioner to the sick club will not be an unwelcome feature of so beneficial a measure.

The promise given by Mr. Lloyd George that the medical profession was not to be "sweated," but on the contrary is to materially benefit in consequence of the introduction of national insurance against sickness is gratifying, and it remains to be seen on what basis the medical practitioner will be called upon to participate in the scheme. It is significant to note the statement that, as far as possible, the field of work of the physician was to be demarcated from that of the pharmacist, in that the latter would be entrusted with the supply of the medicines. Any step of this nature can only be welcome to the practitioner, and THE LANCET[1] has already expressed an opinion on this point. If in Great Britain the average patient is accustomed to associate the doctor with the bottle of medicine, both from the point of view of fee and of curative effect, as a result of the knowledge of the one and of the virtues of the other, he must not forget that this is another insular peculiarity. At the present moment, outside Great Britain, it is practically only in the United States and in some Swiss cantons that the doctors fulfils the double functions of physician and dispenser. In all other countries dispensing by doctors is strictly prohibited, and the physician has in every instance to write out a prescription which is then made up in a pharmacy. Indeed there are even laws in existence in some States which impose heavy penalties if it transpires that any arrangement exists between a medical man and a certain pharmacist. In Germany, Austria, Russia, Hungary, Denmark, Sweden, and Norway, and in the Balkan States, the number of pharmacies is limited by the population, an average of 10,000 souls being reckoned to one pharmacy. Only in out-of-the-way places at some distance from the nearest pharmacy is the physician granted permission to keep a small stock of drugs, but in dispensing these to his patients he has to observe all the rules and regulations otherwise applicable to the pharmacist. In Germany the doctor who has the right to keep a house pharmacy has to purchase his supplies from the nearest pharmacy. In those countries in which the exercise of the pharmaceutical profession is restricted and treated as a monopoly the Government imposes upon the pharmacists an official scale of charges according to which every prescription has to be charged at the same rate for poor and rich alike, and it is a punishable offence to charge more. In the case of prescriptions for members of sick clubs, some countries compel the pharmacist to grant a fixed rebate on the official charges.

The existence of an official scale of charges for prescriptions in a number of countries leads to the question as to the possibility and feasibility of a similar measure in the case of doctors, especially in regulating their relations towards sick clubs. The position of the sick-club doctor in Great Britain and of his German colleague is to a very great extent identical. The sick-club doctor is paid a sum of 3*s.* to 5*s.* per annum for every member of the club, and for this has to attend professionally to all who call upon their services; or the whole sum set out for medical attendance is divided among the club doctors, either through the local medical organisation or by a system of counting a certain number of points for different kinds of services, and then dividing the sum according to the total number of points recorded by each doctor; these are the usual methods of remuneration in force. It stands to reason that any system of fixed payment for an indefinite amount of work is bound to bring a number of injustices and hardships in its train, and thus it is that the *per capita* system of payment has led to those unworthy results that mar the whole—the remuneration of a man who has spent years engaged in expensive study is valued at a couple of pence each time that his services are required. It is therefore obvious that a just and equitable form of payment for medical attendance can only be based on a fixed scale of charges, varying according to the gravity of the case, the skill required, and the time employed.

As the Chancellor foreshadows that the introduction of his scheme will mark the advent of the Golden Age for the oppressed physician, it may be assumed that some kind of tariff will be established to form a basis of remuneration for professional attendance. In this he has a precedent, and some remarks concerning this aspect of governmental authority may prove of interest at the present moment.

An official scale of charges for professional services rendered by physicians and surgeons is in existence in Germany, and its provisions are legally applicable in all cases in which a dispute as to the fee arises in the absence of any special agreement between patient and doctor. These charges also apply in the case of services rendered on behalf of the authorities, &c., and many sick clubs pay their medical men on the basis of this tariff, the doctor agreeing to grant a rebate varying from 10 to 20 per cent. on the total amount of his bill for attendance to members of the club. This is, in fact, the aim of German sick club doctors, that the provisions of this tariff should alone regulate the payment of medical services on behalf of members, so that every case receives payment in accordance with the actual amount of ability and time required. The Bill now before the

[1] THE LANCET, April 1st, 1905, p. 879.

Reichstag requires that every sick club shall draw up a regular agreement with every medical practitioner who attends its members.

The Prussian scale of charges for qualified medical practitioners and dental surgeons, which forms the basis of the following remarks, was introduced in 1897 and amended in 1906. It contains a maximum and a minimum charge for each kind of service, the latter to be applicable in the case of the obviously poor, for patients of sick clubs, &c., unless other arrangements have been entered into by both parties. However, it is distinctly stated that the charge may vary within the prescribed limits according to the circumstances of the case, especially if a considerable degree of skill is required or if other considerations apply. It enumerates in all 185 different medical functions.

THE PRUSSIAN SCALE OF CHARGES FOR QUALIFIED MEDICAL PRACTITIONERS.

First visit in the patient's house	2s. to 20s.
Every following visit in the same case	1s. to 10s.
First visit of patient in the doctor's house	1s. to 10s.
Every following visit ,, ,,	1s. to 5s.

The charge includes an examination of the patient and writing out a prescription; if a special examination is required, necessitating the use of a microscope, laryngoscope, or ophthalmoscope, &c., 2s. to 5s. may be charged extra.

Consultation over the telephone	1s. to 3s.

If the doctor is required to stay with the patient for longer than half an hour, he is entitled to an extra charge of 1s. 6d. to 3s. for every half-hour or part thereof. Visits or consultations between 9 P.M. and 7 A.M. are charged double or three times the above rates, and a visit of the doctor at the patient's house at night time is not to be charged under 3s.

Consultation between several doctors, to each	5s. to 30s.
To every other doctor who assists at an operation, &c	5s. to 20s.
A short certificate of the patient's state of health or illness	2s. to 5s.
An exhaustive report of a case	3s. to 10s.
Vaccination, including the certificate and a visit to control the result	3s. to 6s.
Production of general anæsthesia	5s. to 15s.
Applying a hypodermic injection, a clyster, or an injection into the urethra	1s. to 3s.
Intravenous injection	3s. to 20s.

In case the doctor visits a patient residing outside his own place of abode, he is entitled to charge a certain amount to defray his loss of time and the cost of travelling. If the journey lasts more than ten hours, in addition to all other expenses and charges, he is entitled to a sum of 30s. to 150s. for the day.

SPECIAL SERVICES.

Surgical Procedures.

Opening a superficial abscess or enlarging a wound	2s to 10s.
Curetting	2s. to 10s.
The first simple dressing of a small wound	1s. to 10s.
Suture and first dressing of a larger wound	10s. to 30s.

Each following dressing is charged half the above rates, but not under one shilling. The surgeon usually writes out a prescription for the necessary dressings, which are obtained by the patient in a pharmacy; where this is not done the surgeon may claim the value of the dressings used by him.

Removal of small tumours on the surface of the body	5s. to 15s.
Removal of complicated larger tumours	20s. to 200s.
Plugging the nose	2s. to 5s.
Removal of a tonsil	3s. to 15s.
Removal of a nasal or pharyngeal polypus	10s. to 30s.
Resection of a rib	10s. to 150s.
Operation for hare-lip	10s. to 100s.
Operations on the internal organs of the abdomen	50s. to 500s.

Ophthalmic Operations.

Sight testing	3s. to 15s.
Removal of foreign bodies from the cornea	3s. to 20s.
Iridectomy	20s. to 150s.
Operation for glaucoma	50s. to 300s.
Choice and application of an artificial eye	2s. to 5s.

Gynæcological Operations.

Examination for pregnancy, or affections of the genitals	2s. to 10s.
Assistance at a natural birth	10s. to 40s.
In the case of twins one half more is charged.	
Cæsarean section on a living woman	50s. to 500s.
,, ,, ,, dead woman	20s. to 50s.
Curettage of the uterine cavity	10s. to 100s.
Examination of a wet-nurse	3s. to 10s.

Dental Operations.

Extraction of a tooth	1s. to 5s.
For local anæsthesia during a dental operation	2s. to 5s.
For filling a cavity with plastic material	3s. to 10s.
,, ,, ,, ,, gold	10s. to 30s.
For devitalising pulp	2s. to 4s.

The above excerpt from the charges enumerated in the Prussian tariff will illustrate the "official" view of the value of medical skill and knowledge, and should prove a useful standard of comparison with the existing rates of remuneration in Great Britain, not only in club but in private practice.

Darmstadt.

REPORT OF THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA FOR 1909.

ALMOST simultaneously with the appearance of the report of the Sanitary Commissioner with the Government of India for 1909 arrives the intelligence of the death of its author, Lieutenant-Colonel J. T. W. Leslie, C.I.E., I.M.S., which occurred at Marseilles, while on his way home on furlough. He was an Aberdeen man, and studied also at Edinburgh, in London, and on the continent. In 1884 he joined the Indian Medical Service, obtaining the first place at Netley, and for five years was in military employ, seeing active service in Burma. After officiating as chemical examiner and professor in the Calcutta Medical College he became secretary to the late Surgeon-General Robert Harvey, then Director-General of the Indian Medical Service. In this post he made his mark by his great industry and wide knowledge of affairs. Somewhat reserved in disposition, he devoted himself entirely to his work; he was a great student, and made himself thoroughly acquainted with all the details of medical headquarter administration in India. On appointment as Sanitary Commissioner with the Government of India he threw himself with great energy into the duties of this important office, and the reports that have proceeded from his pen during the last five years have been exceedingly valuable to all students of epidemiology and public health. His work in connexion with the standing committees on malaria and on enteric fever has been of the greatest benefit both to the European and native inhabitants, and has had much to do with the improvement that has been so noteworthy during the last three years.

Meteorology.

The four periods into which the year is divided in regard to weather conditions in India are the cold weather season, the hot weather from March to May, the period of the south-west monsoon from June to September, and that of the retreating monsoon from October to December. During 1909 the cold weather season was unusually free from rain over Northern and Central India, but rainfall was excessive over the southern half of the peninsula. The hot weather period resembled that of 1907, but was very different from that of 1908, March being exceptionally dry, April exceptionally wet, while in May the precipitation was near the average. On the whole, the north-western part of the country and Eastern Bengal and Assam received less, and the rest of India more, than the usual rainfall during this period. In the regular rainy season the precipitation was on the whole more abundant than usual, and in the final period, that of the retreating monsoon, there was, speaking generally, less than the average rainfall. Akyab had the highest rainfall, 234 inches, being 44 inches above the average. Of this enormous quantity, 110 inches fell during June and July. The highest shade temperature registered was 117·8° F. at Multan in June, which station also had the highest *mean* temperature for the month—viz., 98·1°, the thermometer never falling below 79°.

Health of the European Army in India.

The average strength of European troops in India during 1909, excluding officers, was 71,556; of this force 716·9 per 1000 were admitted to hospital, 40·3 per 1000 were on an average constantly sick in hospital, 6·25 per 1000 died, and 9·07 per 1000 were invalided home. All of these ratios were the lowest ever recorded for the European army in India, every disease of importance, except influenza, sharing in the decrease. The chief cause of death was, as usual, enteric fever, but it is noteworthy that more than a third of the decrease in the total death-rate was due to lessened mortality from this disease. The diminution in sickness has been due largely to the lessened prevalence of enteric fever, and as well to diminution in malarial fever and venereal disease; these are, and always have been (since the practical disappearance of cholera), the three diseases of most importance in the European army. It is pointed out

that the reduction in the sickness and mortality from these three causes during the last three years has been remarkable for its suddenness; and the explanation suggested is that quite recently a new and hitherto untried measure of disease prevention has been brought into operation—namely, that of personal or individual hygiene. Until lately all sanitary effort had been directed towards what might be called public hygiene, the object being to free the troops and their surroundings from the germs of infection. We may suppose that the new ideal is to inculcate sanitary knowledge into the soldiers so that it is of less consequence whether their surroundings are free from germs or not. In many stations combatants have joined with medical officers to teach the men how to guard against enteric fever, malaria, and venereal disease; lectures have been given, leaflets have been issued, and health preservation has been made an interesting pursuit. In many regiments officers and men have combined to employ regimental funds in buying mosquito curtains and in enthusiastically chasing the mosquito; large numbers of men take prophylactic doses of quinine regularly and intelligently. So also with regard to venereal disease; lectures and talks to the men by combatant and medical officers have had an excellent effect; the men are led to feel that to contract venereal disease is somewhat of a disgrace to themselves and the regiment (for one thing, a regiment seriously affected would not be sent on active service); the good effects of continuous anti-syphilitic treatment are understood and appreciated; and the spread of habits of temperance has been a powerful cause for the diminution in numbers of cases of venereal infection.

The forces in India are divided into a northern and a southern army; the former, with a strength of 37,795 men, has divisions at Peshawar, Rawal Pindi, Lahore, Meerut, and Lucknow, with three brigades on the Afghan frontier; the latter (31,426) has divisions at Quetta, Mhow, Poona, Secunderabad, and in Burma, with a brigade at Aden. There was a difference during the year, as is always the case, between the health statistics of these two armies, the Northern Force having had an admission-rate of 775 and a death-rate of 6·97 per 1000, while in the Southern Army the corresponding figures were 661 and 5·66; in the former the most numerous admissions to hospital were for malaria (237·2 per 1000), uncertain pyrexia (78·7), and venereal disease (62·2); in the Southern Army the most numerous admissions were also for malaria (165·8), venereal (76·3), and uncertain pyrexia (41·3). Enteric fever was the most fatal illness in each army (2·11 deaths per 1000 in the Northern and 1·05 in the Southern).

On comparing different parts of India one with another as regards their "constantly sick-rate," it is seen that this was as high as 53·6 on the Western Coast (Colaba, Calicut, &c.), and 51·3 in the Burma Coast area (Rangoon); while in the Deccan (Secunderabad, Poona, &c.) it was only 28·4, and in the group of Hill Stations 30·7. The admission-rate was highest in the N.W. Frontier, Indus Valley, and N.W. Rajputana area (991 per 1000); S.E. Rajputana, Central India, and Gujarat came next with 906 per 1000; while the Deccan was lowest with 489, the group of Hill Stations coming next with 513 per 1000. The individual stations that have been most conspicuous for sickness have been Delhi, showing an admission ratio of 2016 per 1000 and 78·7 constantly sick; Agra, with 1367 admissions per 1000 and 66·8 constantly sick; and Meerut, with 1214 admissions and 56·2 constantly sick. Jullundur, Ferozepore, Amritsar, Peshawar, and Multán all had admission ratios of over 1100 per 1000. On the other hand, Secunderabad had the lowest admission-rate (276·8), also the lowest number constantly sick (19·7), while Belgaum, Poona, Bellary, and Quetta all had less than 500 admissions per 1000. Practically all the important unhealthy stations are in Northern India and nearly all the healthy ones of any considerable size are in the Southern Command.

Principal Diseases.

Taking now some of the principal causes of sickness we find malaria to have accounted for 202·8, and pyrexia of uncertain origin for 61·3 admissions per 1000 of strength throughout India, the former being most prevalent at Delhi and Agra, where the admission ratios were 1144 and 761 respectively. Meerut, Ferozepore, Amritsar, Peshawar, and Multan were other large stations where the admissions exceeded 500 per 1000. Uncertain pyrexia caused 323 admissions per 1000 at Nowshera; a number of the cases were malarial in origin, but at Peshawar and some other stations a considerable proportion were considered to be cases of phlebotomus or sand-fly fever, which were returned under influenza, to the symptoms of which the cases closely corresponded. A new heading for phlebotomus fever has now been added to the nomenclature. As regards malaria, the year was not a bad one, but a large number of men who had contracted the disease in the very unhealthy autumn of 1908 continued to suffer from relapses in the early part of 1909; the admission rate is much below that of the previous year (244 per 1000); but 6909 cases were also treated in barracks (96 per 1000). Much care was taken in the "after treatment" of malarial cases, this being now systematically adopted at all stations. The usual procedure is to divide the men who had been attacked during the previous autumn into three classes: (1) men fit for all duties; these receive no medicine, but attend hospital once a month to be weighed and inspected; (2) men fit for light duties; these are weighed once a week and receive quinine at least twice a week; and (3) men unfit for duty, who attend hospital daily to receive a course of quinine for as long as may be necessary. At Gharial one regiment arrived in a very bad state from Peshawar; 62 men were treated by intramuscular injection of 10 grains of quinine once a week with excellent results. A systematic search for malaria carriers was made at Ferozepore, and among 211 men whose blood was examined 16 were found to have malignant tertian parasites and 9 to have benign tertian parasites in the blood; all these men were performing their duties and supposed to be taking prophylactic doses of quinine. In a large number of stations malaria patients were segregated by being made to sleep within curtains, and the good effects of the "prophylaxis of the individual"—i.e., the use of curtains by the healthy at malarial stations—are becoming widely recognised. At Rawal Pindi every man in the garrison was provided with a net and poles at a cost of 4 rupees a head, half this sum being paid by the men themselves and half from the regimental funds. In most of the feverish stations mosquito curtains are now used by a large proportion of the men. It is a satisfaction to the older generation of Anglo-Indians to learn that a measure which has been recommended any time during the last 20 years, and derided as impracticable, is now acknowledged to be feasible, and is actually carried out. It is found that punkhas are not required when the men sleep in the open under a mosquito net. Quinine prophylaxis continues to be employed; emphasis is laid on the importance of a medical officer personally supervising the administration. At Ferozepore, a notoriously malarial station (admission rate for fever 656·5 per 1000), an experimental segregation camp was started for healthy men; 75 men occupied the camp from Sept. 18th to Oct. 25th; they kept in excellent health. Sand-flies were numerous in the camp, but no mosquitoes.

Venereal diseases caused the next largest number of admissions to hospital after malaria, the ratio being 67·8 per 1000 for the whole of India. As usual, they were more prevalent in the southern than in the northern army, but the difference in the year under notice was less than usual (62·2 in the northern and 76·3 in the southern army). The improvement as compared with former years is most marked; for the decennium 1897–1906 the venereal admission ratio had been 271·5 per 1000. As already mentioned, the spread of habits of temperance and a higher standard of personal hygiene have been the chief reasons for this gratifying advance. Diarrhœa (12·5) and dysentery (11·2) were the next commonest causes of admission to hospital, the prevalence being somewhat less than in recent years.

The most fatal disease was enteric fever, causing 1·58 deaths per 1000 of strength, or one-quarter of the whole number of deaths (113 out of 447) during the year. After this, hepatic abscess (34 deaths), malaria (26), pneumonia (22), and valvular disease of the heart (11) were the most fatal affections. Cholera caused 12 admissions and 7 deaths. Five of these cases occurred at Secunderabad in the men of a patrol employed the day before on field manœuvres. At first ptomaine poisoning was suspected, but it was found that the men had drunk muddy water from a small tank close to a village, and the disease was diagnosed as cholera.

(To be continued.)

MEDICINE AND THE LAW.

Police Powers under the Public Health Acts.

A RECENT decision of the Divisional Court in the case of Dodd *v.* Pearson will have been noted by police and sanitary authorities with interest. It affects others besides the police who for any reason may desire to take action under the Public Health Acts where the local sanitary authority has refused to do so. The district council in the case in question refused to prosecute a farmer for having in his possession for the purpose of preparation for sale as human food the carcass of a cow which was diseased and unfit for consumption. The police thereupon took proceedings, securing a conviction and the imposition of a fine of £20 with costs. On a case being stated by the justices, it was argued in the King's Bench Division that Section 253 of the Public Health Act, 1875, provided that, except in cases for which express provision is made, proceedings for the recovery of any penalty shall not be taken by any person other than the local authority or a party aggrieved without the consent of the Attorney-General. The court acceded to this view and held that the proceedings in question were for the recovery of a penalty within the meaning of the section; that the police were not "a party aggrieved," and that as they had not first obtained the consent of the Attorney-General their omission of this preliminary step must be fatal to the conviction. They could not prosecute on their own account. In this instance the meat was destroyed before any of it reached the public, so that there was no party aggrieved.

Rex v. *Mary Dorcas Wilesmith, George Turner, and John Wilesmith.*

The "Worcester cruelty case," which attracted considerable attention throughout the country, was brought to an end after a prolonged trial at the Worcester city quarter sessions with the conviction of all three prisoners. The facts proved have been so recently reported in the newspapers that they need only be briefly recapitulated. In 1906 Mrs. Wilesmith appears to have obtained and adopted the child Florence Pasterfield, now 13 years of age, treating her with kindness at first, but afterwards with neglect and cruelty. Latterly she neither fed the little girl nor clothed her properly, and on one occasion during 1910 she caused and permitted George Turner, a farm labourer in her employment, to strip the child naked, and to inflict upon her a severe thrashing with a whip, afterwards telling him to rub salt into the wounds thus caused. On another occasion a nephew of Mrs. Wilesmith not charged was alleged to have taken Florence Pasterfield out of bed and dragged her upstairs by the feet, after which Turner beat her on her bare flesh with a trace. Details of other acts of cruelty, of general neglect, of indifferent food, of confinement and enforced household drudgery were laid before the jury. The medical evidence given by Dr. E. L. Bunting was to the effect that when the child was submitted to him for examination she presented a general appearance of hopeless misery. Her clothes were ragged and dirty and her hands and body begrimed with dirt. On her body were numerous scars from 1 to 4½ in. in length which must have resulted from wounds which had penetrated the skin. They followed the curves of the victim's body, showing that they were inflicted with a flexible weapon. Nine small scars were on the upper part of the abdomen. There were two large bruises on her body which were probably the result of blows inflicted upon the bare flesh. Great violence must have been used to cause them. This evidence was effective in disposing of that given by the prisoners, and especially by Mrs. Wilesmith, to the effect that violence had not been used, that there had been no such beatings as those described by the child, that she had fallen against a washhand stand, and other suggestions and excuses such as are common in cases of this kind. The unusual feature of the trial, so far as we are aware, connected with the question of the injuries inflicted consisted in the submission of the child's body for the jury's examination at the close of the evidence for the defence. With the sanction of the Recorder, the jury and counsel for the prosecution and defence went with the Recorder into a room for the purpose. Apparently this was done at the instance of counsel for the prosecution in order to combat a statement by Mrs. Wilesmith that she had seen the wounds and had thought that they were what she called "a breaking out" of the skin. There was, however, abundant evidence to negative the possibility of any such belief on her part, including the absence of any steps to provide medical treatment, and in itself a physical examination by a jury can hardly be regarded as desirable upon such an occasion. The girl in this instance was a mere child, it is true, but if she had been a little older it would have been out of the question. In her case also, as is usual, there was evidence available, apart from medical evidence, including photographs, as to the marks visible when she was taken from Mrs. Wilesmith's house to the workhouse, and this would refer to a period nearer to the time when Mrs. Wilesmith professed to have attributed them to disease. It is submitted that a jury, in cases where physical injury, its causes, and its probable results are involved, should be guided in arriving at a verdict by medical evidence called for the prosecution or defence. An examination by laymen trying the case on the whole of the evidence may lead, on the one hand, to exaggeration, on the other, to insufficient appreciation of the importance of outward phenomena the proper understanding of which requires scientific training and professional experience. In the case of Mrs. Wilesmith and Turner the jury's inspection of their victim probably made no difference either way. They were convicted of offences under the Cruelty to Children Act, and of inflicting grievous bodily harm, except that Turner was found not guilty upon the count against him under the Act which charged neglect, and both were sentenced to two years' imprisonment with hard labour, the maximum penalty under the statute mentioned. Five years' penal servitude might have been awarded on the conviction for inflicting grievous bodily harm, but the sentence imposed is one of exemplary and well-deserved severity. John Wilesmith, the son, against whom the evidence was of a different character, chiefly to the effect that he had on more than one occasion struck the little girl with a steel foot-rule, was bound over to come up for judgment if called upon. The Society for the Prevention of Cruelty to Children is to be congratulated upon its successful interference in a case of unusual character and of some difficulty.

BRITISH MEDICAL BENEVOLENT FUND.

AT the April meeting of the committee of the above fund 22 cases were considered and grants amounting to £165 were made to 17 of the applicants. The following is an abstract of the cases relieved:—

Daughters, aged 19, 17, 16, and 13, of late M.R.C.S., L.S.A. Left practically penniless at the recent death of their father, and only brother is quite unable to help. Voted £20.

Widow, aged 68, of L.R.C.P. Edin. Lost her husband from cancer six months ago and was unable to sell the death vacancy as the practice had been neglected during his illness. Only income a few shillings a week allowed by her eldest son and a son-in-law. Voted £10.

Widow, aged 39, of L.R.C.P., L.R.C.S. Edin. No income; endeavours to support herself by nursing, but earnings are insufficient for her own maintenance and unavoidable expenses of her two children during their holidays. Relieved five times, £40. Voted £10.

Daughter, aged 61, of late L.S.A. Has been recently elected to a pension of £21 per annum from the United Kingdom Beneficent Association and earns about 2*s.* 6*d.* a week by giving music lessons. Relieved four times. £40. Voted £10.

Daughter, aged 64, of late M.R.C.S. Received a yearly grant from the Kent Medical Benevolent Society, and has a small annuity, but income is insufficient for unavoidable expenses because, being mentally deficient, some oversight is required, although not suitable for an asylum. Relieved 12 times, £120. Voted £12.

Daughter, aged 53, of late M.D. Aberd. Has a small annuity from a Governesses' Benevolent Society and gives music lessons when able to obtain pupils. Relieved once, £6. Voted £12.

Daughter, aged 64, of late M.R.C.P. Lond. Was well provided for, but mortgaged her property to assist her father after unexpected financial losses, and is now dependent on a small annuity and slight help from friends. Relieved four times, £32. Voted £5.

Widow, aged 62, of M.R.C.S. Endeavours to support herself by letting lodgings, but her rooms have been vacant for some months. Children only able to give slight help. Relieved five times, £70. Voted £2, and case to be reconsidered in May.

Widow, aged 50, of M.R.C.S. No income and entirely dependent on this Fund and small earnings by needlework. Relieved nine times, £95. Voted £2, and case to be reconsidered in May.

Widow, aged 48, of L.R.C.P., L.R.C.S. Edin. No income and health very indifferent. Slight help from a sailor son. Relieved seven times, £75. Voted £12.

Widow, aged 66, of M.R.C.S. Since husband's death a few years ago has taken boarders, but finds them increasingly difficult to obtain owing to changes in the neighbourhood. Children unable to help. Voted £12.

Daughter, aged 62, of late M.R.C.S. Acts as housekeeper to her brothers, but as they can only give a home in return for services is obliged to apply to this Fund. Relieved nine times, £132. Voted £12.

Daughter, aged 39, of late M.R.C.S. Is a chronic invalid, and being unable to earn her living is dependent on a mother who is an Epsom pensioner. Relieved twice, £20. Voted £10.

Daughter, aged 59, of late L.S.A. Endeavours to support herself by letting lodgings, but is unavoidably in arrears with her rent. Relieved three times, £34. Voted £12.

Widow, aged 61, of L.S.A. Supplements slight help from children by letting lodgings, but has had two rooms unlet for several months. Relieved nine times, £100. Voted £10.

Widow, aged 47, of M.B. Aberd. No income, and dependent on small weekly allowance made by her eldest son and a sister. Has been ill all the winter, and has only just recovered from a severe attack of acute bronchitis. Relieved three times, £25. Voted £12.

Wid w, aged 61, of L.F.P.S. Glasg. No income; endeavours to maintain herself and an invalid daughter by selling sweets on commission. Relieved three times, £48. Voted £2, and case to be reconsidered in May.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 77 of the largest English towns 8473 births and 4388 deaths were registered during the week ending May 6th. The annual rate of mortality in these towns, which had been equal to 15·9, 15·4, and 14·3 per 1000 in the three preceding weeks, further declined to 13·3 in the week under notice. During the first five weeks of the current quarter the annual rate in these towns averaged 14·8 per 1000. In London during the same period the recorded annual rate did not exceed 14·3 per 1000. The annual reported death-rates last week in the 77 large towns ranged from 6·5 in Leyton, 7·4 in Norwich, and 8·2 in Willesden and in Hornsey, to 19·3 in Dewsbury, 19·5 in Coventry, 20·1 in Middlesbrough, and 20·2 in Barrow-in-Furness. The 4388 deaths from all causes in the 77 towns last week showed a further decline of 304 from the numbers in recent weeks, and included 412 which were referred to the principal epidemic diseases, against numbers declining steadily from 702 to 448 in the eight preceding weeks. Of these 412 deaths, 180 resulted from measles, 100 from whooping-cough, 60 from infantile diarrhœa, 33 from diphtheria, 22 from scarlet fever, and 17 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases in the 77 towns was equal to 1·3 per 1000, and was lower than in any week since the first of this year. The fatal cases of measles in the 77 towns, which had steadily declined in the eight preceding weeks from 474 to 223, further fell last week to 180; the highest annual death-rates last week from this disease, among these towns, were 1·6 per 1000 in East Ham, Plymouth, and Newcastle-on-Tyne, and 1·8 in Rhondda. The deaths from whooping-cough, which had been 134 and 118 in the two previous weeks, further declined to 100 last week, but caused a rate equal to 1·4 per 1000 in Halifax. The 60 fatal cases of diarrhœa among children under two years of age, exceeded the number in the previous week by 7. The 33 deaths referred to diphtheria exceeded the low number in the previous week by but 1; they included 12 in London and its suburban districts, 3 in Leeds, and 2 both in Bolton and in Blackburn. The fatal cases of scarlet fever, which had been but 14 in each of the two preceding weeks, rose to 22 last week; 6 occurred in London and its suburban districts, 4 in Liverpool, and 2 both in Brighton and in Rhondda. The 17 deaths referred to enteric fever also exceeded the low numbers returned in the two previous weeks; 3 were recorded in London and its suburban districts. The number of scarlet fever patients under treatment in the metropolitan asylums and the London Fever Hospital, which had been 982, 995, and 1037 on the three preceding Saturdays, had further increased to 1045 at the end of last week; 142 new cases of this disease were admitted to these hospitals during last week, against 155 and 141 in the two preceding weeks. These hospitals also contained 776 cases of measles, 317 of whooping-cough, 20 of enteric fever, and 8 of small-pox on Saturday last. The 1197 deaths from all causes in London last week showed a further decline from recent weekly numbers, and included 227 which were referred to diseases of the respiratory system, against 328 and 268 in the two preceding weeks; 16 deaths were directly referred to influenza. In the 77 towns, 136 deaths were attributed to different forms of violence, against 197 and 166 in the two previous weeks; and 337 inquest cases were registered. The causes of 32, or 0·8 per cent., of the deaths registered in the 77 towns during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London and in its eight suburban districts, in Manchester, Leeds, Bradford, Hull, Leicester, Salford, and in 41 other smaller towns; the 32 uncertified causes of death in the 77 towns last week included 5 in Liverpool, 3 in Birmingham, 3 in Burnley, and 2 each in Bootle, Sunderland, and South Shields.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch town 969 births and 567 deaths were registered during the week ending May 6th. The annual rate of mortality in these towns, calculated on the population enumerated at the recent Census, which had been equal to 18·7 and 19·1 per 1000 in the two preceding weeks, declined to 17·3 in the week under notice. During the first five weeks of the current quarter the annual rate in these towns averaged 18·7 per 1000 of the recently enumerated population. The annual death-rate last week ranged in the eight towns from 13·9 and 14·8 in Dundee and Paisley to 17·9 in Glasgow and 28·4 in Greenock. The 567 deaths from all causes in the eight towns last week showed a decline of 58 from the number in the previous week, and included 67 which were referred to the principal epidemic diseases, against 81 and 65 in the two preceding weeks; of these 67 deaths, 37 resulted from whooping-cough, 11 from diarrhœa, 8 from measles, 6 from diphtheria, 3 from enteric fever, and 2 from scarlet fever, but not one from small-pox. The mean annual rate from these epidemic diseases in the eight towns was equal to 2·0 per 1000, and exceeded by 0·7 the mean rate from the same diseases in the 77 English towns. The 37 fatal cases of whooping-cough in the eight towns last week showed a further decline from 56 and 40 in the two preceding weeks, and included 24 in Glasgow, 4 in Edinburgh, 3 both in Leith and Paisley, and 2 in Aberdeen. The 11 deaths attributed to diarrhœa were all of infants under two years of age; 6 occurred in Glasgow and 2 in Greenock. Seven of the 8 fatal cases of measles and 3 of the 6 deaths from diphtheria occurred in Glasgow. The 3 deaths referred to enteric fever, slightly exceeding the numbers in recent weeks, included 2 in Glasgow and 1 in Aberdeen. The deaths referred to diseases of the respiratory system in the eight towns, which had been 136 and 120 in the two preceding weeks, further declined last week to 84, but exceeded the number in the corresponding week of last year by 8. Of the 567 deaths from all causes in the eight towns, 163, or 29 per cent., were recorded in public institutions, and 22 were attributed to different forms of violence. The causes of 11 deaths in the eight towns last week, or 1·9 per cent., were not certified or not stated; in the 77 English towns last week the proportion of uncertified causes of death did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,163,596 persons, 686 births and 407 deaths were registered during the week ending May 6th. The annual rate of mortality in these towns, which had been equal to 22·0 and 20·8 per 1000 in the two preceding weeks, declined to 18·2 in the week under notice and was considerably lower than in any recent week. During the first five weeks of the current quarter the annual death-rate in these towns averaged 20·7 per 1000; the mean rate during the same period in the 77 English towns did not exceed 14·8, and in the eight Scotch towns 18·7 per 1000. The annual death-rate during the week under notice in the 22 Irish towns was equal to 21·3 in Dublin (against 12·7 in London), 14·3 in Belfast, 23·3 in Cork, 19·0 in Londonderry, 13·7 in Limerick, and 17·5 in Waterford; in the 16 smallest of these Irish towns the mean annual death-rate during the week was equal to 19·0 per 1000. The 407 deaths from all causes in the 22 towns during the week showed a further decline of 58 from the high numbers in the two preceding weeks, and included 28 which were referred to the principal epidemic diseases, against 36, 30, and 28 in the three preceding weeks; these 28 deaths were equal to an annual rate of 1·5 per 1000,

which exceeded by 0·2 the mean rate from the same diseases in the 77 English towns. Of these 28 deaths from the principal epidemic diseases in the Irish towns, 8 resulted from measles, 8 from diarrhœa, 6 from whooping-cough, 3 from enteric fever, and 1 each from typhus, scarlet fever, and diphtheria, but not one from small-pox. All the 8 fatal cases of measles and 4 of the 8 deaths from diarrhœa occurred in Dublin. The 6 deaths from whooping-cough, a decline of 2 from the number in the previous week, included 3 in Dublin, 2 in Londonderry, and 1 in Cork. Of the 3 deaths referred to enteric fever, 1 each occurred in Dublin, Belfast, and Cork, and the fatal case of typhus was returned in Clonmel. Three deaths from diarrhœa were recorded in Cork. The deaths in the 22 towns referred to diseases of the respiratory system, which had been 136 and 87 in the two preceding weeks, rose again last week to 105. Of the 407 deaths from all causes, 132, or 32 per cent., were recorded in public institutions. The causes of 12, or 2·9 per cent., of the deaths in the 22 towns were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death in the week under notice did not exceed 0·8 per cent. in the 77 largest English towns, and 1·9 per cent. in the eight principal Scotch towns.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff-Surgeons: F. R. Mann to the *Æolus* on commissioning; H. H. Pearse to the *Venus;* and W. R. Center to the *Donegal.* Surgeons: E. B. Kenny to the *Donegal;* W. T. Haydon to the *Victory,* additional, for disposal; R. Thompson to the R.M.A., Eastney; and A. L. Robinson to Malta Hospital.

ROYAL ARMY MEDICAL CORPS.

Brevet-Colonel R. S. F. Henderson, honorary physician to His Majesty the King, has been granted 90 days' privilege leave of absence. Lieutenant-Colonel C. E. Faunce, from Gibraltar, has been appointed Administrative Medical Officer at Chatham. Lieutenant-Colonel W. T. Swan has been appointed officer in charge of the Royal Victoria Hospital at Netley in succession to Lieutenant-Colonel F. J. Jencken, transferred to the Eastern Command. Brevet-Lieutenant-Colonel O. R. A. Julian, C.M.G., from Kasauli, has taken up charge of the Military Hospital at Portobello, Dublin. Lieutenant-Colonel A. A. Sutton, D.S.O., senior medical officer, Sierra Leone, has arrived home on duty from the West Coast of Africa. Lieutenant-Colonel H. A. Haines has been transferred from the Southern Command to the Eastern Command. Lieutenant-Colonel A. F. Russell, C.M.G., officer in charge of the military hospital, Cottonera, Malta, has arrived home on leave. Major C. A. Stone, on return from a tour of service in India, has been appointed to the Southern Command. Major E. S. Clark, from Belfast, has taken up duty at Holywood. Major P. H. Collingwood has been transferred from Devonport to Crownhill for duty. Major J. G. Stoney Archer has been appointed Specialist in Advanced Operative Surgery to the Burma Division. Major C. T. Samman has been transferred from the Eighth (Lucknow) Division to the Fifth (Mhow) Division, India. Major J. Ritchie, from Multan, has been selected to command the Military Hospital, at Dalhousie. Major W. G. Beyts has been appointed to hold Civil Medical Charge of Ranikhet in addition to his military duties in succession to Lieutenant-Colonel G. H. Barefoot. Major W. P. Gwynn, embarkation medical officer at Karachi, has been granted seven months' leave of absence home from India. Major W. E. Hardy, from Wynberg, has taken up duty at the Guards' Depôt, Caterham. Major A. H. Morris, from Edinburgh, has taken up the appointment of Specialist Sanitary Officer at Malta. Major G. B. Carter has embarked for a tour of service in India from the Dublin District. Captain F. L. Bradish, at present serving at the Station Hospital, Jullundur, has been granted three months' privilege leave of absence. Captain J. E. Hoar, on return from a tour of service in India, has been appointed to the Belfast District. Captain P. C. T. Davy, in charge of the Station Hospital, Jutogh, has been selected to officiate as Surgeon to His Excellency the Commander-in-Chief of India during the absence on leave of Captain A. E. J. Lister, I.M.S. Captain L. V. Thurston, from Khanspur, has taken up duty in the Cork District. Captain J. E. H. Gatt, from Cosham, has joined the Station Hospital at Allahabad for duty. Captain R. E. Todd has been transferred from Alexandria to Cairo. The following Lieutenants will be required for service abroad during the coming trooping season:—C. T. V. Benson, W. P. MacArthur, R. C. Priest, P. S. Tomlinson, F. W. M. Cunningham, E. M. Parsons Smith, A. D. Stirling, G. P. Taylor, R. C. Paris, A. W. Bevis, E. C. Lambkin, O. W. McSheehy, M. J. Williamson, and C. L. Franklin. Lieutenant H. H. Blake has been transferred from the Eighth (Lucknow) Division to the First (Peshawar) Division for duty. Lieutenant P. G. M. Elvery, from the Curragh, has taken up duty in Egypt.

INDIAN MEDICAL SERVICE.

The services of Lieutenant-Colonel H. Hendley, civil surgeon at Lahore, and professor of forensic medicine and toxicology at the Government Medical College, Lahore, have been placed at the disposal of the Home Department, Government of India. Lieutenant-Colonel J. M. Cadell, civil surgeon, of Ghazipur, has been granted leave of absence home from India for one year and four months. Lieutenant-Colonel W. Vost has taken up duty as civil surgeon at Saharanpur. Lieutenant-Colonel C. MacTaggart, Inspector-General of Prisons in the United Provinces, has arrived home on leave of absence from India. Major E. R. Rost, officiating senior civil surgeon at Rangoon, has been appointed a Civil Surgeon of the First Class in succession to Major C. Duer, whose services have been placed at the disposal of the Government of India. Major G. V. Hunter, superintendent of the Presidency jail at Calcutta, has been granted six months' leave of absence. Captain H. W. Cazaly has been appointed Specialist in Advanced Operative Surgery to the Fifth (Mhow) Division. Captain S. T. Crump, civil surgeon of Loimwe, has been appointed Resident Medical Officer at the General Hospital, Rangoon, in succession to Captain H. A. Williams, D.S.O., who has been granted leave. On return to duty Captain G. H. Stewart has been appointed Civil Surgeon at Taunggyi, Southern Shan States. Captain B. Foster, resident surgeon at the European General Hospital, Calcutta, has been granted furlough. Captain H. C. Brown has taken over duty as Specialist in Prevention of Disease to the Jullundur Brigade. Captain D. N. Anderson has been granted six months' extension of his leave of absence home from India on medical certificate. Captain A. E. J. Lister, surgeon to His Excellency the Commander-in-Chief of India, has been granted eight months' leave of absence home.

TERRITORIAL FORCE.

Royal Engineers.

West Riding Divisional Engineers, Royal Engineers: Surgeon-Lieutenant Joseph M. Benson to be Surgeon-Captain (dated Sept. 26th, 1910).

Royal Army Medical Corps.

1st Home Counties Field Ambulance, Royal Army Medical Corps: Thomas Henry Peyton to be Lieutenant (dated March 3rd, 1911).

Attached to Units other than Medical Units.—Captain William Gray resigns his commission (dated May 6th, 1911).

For Attachment to Units other than Medical Units.—David Dickie to be Lieutenant (dated March 31st, 1911).

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Surgeon-Captain Arthur John Helm Montague, from the 8th Battalion, The Sherwood Foresters (Nottinghamshire and Derbyshire Regiment), to be Captain, with precedence as in the Territorial Force (dated May 6th, 1911).

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Harold Fitz Vellacott to be Lieutenant (on probation) (dated April 24th, 1911).

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

Captain A. B. Smallman opens the May issue of the *Journal of the Royal Army Medical Corps* by an interesting paper dealing with Some Points in the Prevention of Malaria among British Troops in India. Among his conclusions are:

(1) That a malignant case is infective, as a rule, for a fortnight or three weeks from the time that crescents first appear in the finger blood, which time, it may be noted, is usually about a week after the cessation of the fever; and (2) that a patient may be highly infective when even only one crescent can be found after a good search. He closes his paper with the words: "We have to a large extent eliminated the typhoid 'carrier' from the barracks; there does not seem any good reason why we should not now try to reduce the potentiality for evil of the malaria 'carrier' by appropriate means." Anti-malarial measures at Colaba, Bombay, is the title of a paper by Lieutenant-Colonel G. F. Gubbin which describes the methods adopted at the Colaba station for reducing the number of mosquitoes. Among other articles of interest is one by Brevet-Colonel R. H. Firth, in which he summarises the main results of his observations made in the hills of India on the evening primrose and other plants with the object of confirming elemental facts concerning the origin of species and certain questions concerning heredity. He concludes with the deductions "that new species may and do arrive not only by hydridisation but by mutations; in the majority of cases probably by the former"; and remarks that the day is probably not far distant when the nature of the induced changes which produce a mutation will be understood; and when that day arrives man will be able to apply inducive agents in a manner to guide development, and thus help, if not supplant, Nature in the evolution of organisms.

THE SERIOUS ALLEGATIONS CONCERNING PARKHURST MILITARY HOSPITAL.

The War Office inquiry into the administration of Parkhurst Military Hospital has been completed, but the report has not yet been issued. Several changes have been made in the staff of the hospital. Major W. E. Hudleston, R.A.M.C., has relieved Lieutenant-Colonel J. F. Donegan, R.A.M.C., who is transferred to Cosham Hospital, from the medical charge of Parkhurst. This change took place before the inquiry into the charges of overworking of the staff had been concluded and before the report has been issued. In the House of Commons on May 9th a number of questions were put to the Under-Secretary for War with reference to the change in the medical command of the hospital before the Court of Inquiry had reported. Mr. Acland said that it was considered desirable that during the course of the inquiry Lieutenant-Colonel Donegan should not continue to hold his position. Mr. Acland gave an undertaking that officers and non-commissioned officers should not have their futures prejudiced in consequence of the changes that had been made. A letter has been published, signed by the widow of Sergeant Stokes, in which she points out that no blame attaches to Colonel Donegan, and she has stated that her late husband had always spoken of Colonel Donegan as being most fair and kind to him.

THE ROYAL WARRANT AND OFFICERS' PENSIONS.

In the House of Commons on May 9th Major Archer-Shee, the Marquis of Tullibardine, and Mr. Lawson asked questions with regard to the hard case of Lieutenant-Colonel L. W. Swabey, late R.A.M.C., who was retired on a pension at the age of 55 years after serving for 29 years and 364 days. As the period of service is one day short of 30 years the pension has been fixed on the 25 years' service scale instead of the 30 years' scale, making a difference in the pension of about £45 per annum. Mr. Acland replied to the effect that the terms of the Royal Warrant must be adhered to. Even if it could be shown that the conditions of the Royal Warrant have always been enforced, the fact pointed out by Major Archer-Shee that Lieutenant-Colonel Swabey was four months and four days on probation before he got his promotion, making the actual period of service over 30 years, would seem to show that Lieutenant-Colonel Swabey has legitimate ground for complaint.

VACCINATION GRANTS.—Mr. G. Shepley Page, public vaccinator for Bristol, has been awarded the grant of the Local Government Board for successful vaccination.—Mr. J. D. Staple, public vaccinator for the Ashley district of the Bristol union, has been awarded the Local Government Board grant for successful vaccination for the seventh consecutive time.

Correspondence.

"Audi alteram partem."

A METHOD OF DETERMINING THE EXISTENCE OF DEAFNESS.

To the Editor of THE LANCET.

SIR,—It is said that the Workmen's Compensation Act has been followed by a large increase in the number of cases of traumatic neurasthenia, of which a considerable number appear to improve under the influence of a pension or pecuniary compensation. Among such cases are some of deafness, and as the detection of simulated deafness is by no means easy a method will meet with approval which possesses the advantages of an objective demonstration, not perceived by the patient, and of absolute reliability. Such a method, for which the credit is due to Dr. Lombard of the Laennec Hospital, I saw demonstrated in Professor Sebileau's clinique in Paris in the autumn of 1909, and I have since tested it on a considerable number of cases without any failure. They have not been cases of simulated deafness, of course, but experiments in simulating deafness and attempts to restrain the objective demonstration have convinced me that in the procedure to be described we have an invaluable means of determining the existence or non-existence of the hearing faculty and to some extent a method of measuring hardness of hearing.

The principle on which it is based is that of voice-control. As is well known, the loudness of the voice is determined by the sound heard by the speaker who automatically raises his voice when its sound is dulled or drowned. The method which I at present adopt is as follows. A pair of telephone receivers are applied closely to the ears of the patient who is instructed to read aloud in an even voice. The receivers are attached to a transformer and the current, which must be alternating or interrupted, turned on gradually. I use a 60-cycle current and consequently get a low note which can be increased in volume as desired. If the patient is deaf, no sound is heard by him and hence no alteration in the voice takes place. If, however, he can hear, he unconsciously raises his voice as soon as the sound producer begins to drown it, and lowers it again as the strength of the current is reduced. Where the deafness is unilateral the fact can be demonstrated by cutting off the current alternately from each receiver. When that to the deaf ear is cut off the voice remains unchanged; it falls to the normal level when the sound ceases in the hearing ear.

The receivers can be used with any small faradic battery, or a similar result can be obtained by the use of clockwork sound producers, but the receivers have the advantage that they are not heard by the observer and introduce no complications from bone conduction, as the sound is practically inaudible to the patient when the receiver is placed on the skull.

In measuring the degree of deafness, the point is noted on the scale of the transformer at which the voice is definitely raised or lowered; and it may be that by variations in the note of the receiver, and by judicious selection of the words to be read, one may arrive eventually at a method of estimating deafness as accurately as defects of sight are now estimated by the ophthalmoscope. But whether that successful result follows or not, there seems to be no doubt that in this manner we obtain an absolute control over all cases of simulated deafness. It is curious that the method has not been previously made use of, for the principle of the loss of voice-control in a noise has been known generally for ages, and indeed some 15 or 20 years ago it formed the subject of an amusing picture by Du Maurier in your contemporary *Punch*.

I am, Sir, yours faithfully,

DONALD F. SHEARER, F.R.C.S. Eng.

Exeter, May 8th, 1911.

ON THE SUPRAPUBIC TRANSVERSE FASCIAL INCISION.

To the Editor of THE LANCET.

SIR,—To one whose practice of transverse abdominal incisions extends over a period of about eight years, Dr. T. Wilson's interesting paper in your issue of May 6th, adds welcome support to a method of procedure which is as truly advantageous as it is anatomically correct. But I should like to lead Dr. Wilson to still further improvements, and that is, in the first place, by suggesting to him to make his final incision into the peritoneal cavity also transversely, and so follow out logically the correct reasoning he employs for adopting the transverse division of the aponeurosis in front of the recti. Some years ago Dr. J. Cleland, then professor of anatomy in the University of Glasgow, pointed out that very frequently the posterior sheaths of the recti did not terminate midway between the umbilicus and the pubes in the fold of Douglas but extended down to the pubes, so that there existed both in front and behind the recti muscles an enveloping sheath of transversely disposed fibres. This disposition I have frequently observed and pointed out to those assisting me at operations. If, therefore, the reason for cutting the aponeurosis transversely in front of the rectus is to avoid cross division of the tendinous fibres, equally should the cut be carried in the same direction when the deeper or final incision is made into the peritoneal cavity. In the second place, may I also suggest, as furthering the claims which Dr. Wilson otherwise so well advances, that freer access to the deeper seats of operation as well as greater expeditiousness in execution may, when desirable, be safely attained by dividing, in part or wholly, the muscle fibres of one or both recti. In making this somewhat bold suggestion in the face of a practice which has been hitherto all but religiously condemned I do so advisedly. Not only do I know that free access facilitates greatly the rapidity and safety with which an abdominal operation can be performed, and that expeditiousness in abdominal work is an all-important factor regarding the nature of recovery, immediate or remote, but that a perfectly firm cicatrix can be obtained secure against any future development of hernia. The acquisition of the latter is not dependent on the union of the divided muscle fibres, but on the close and accurate coaptation of the divided sheaths both in front and behind the recti.

Although Dr. Wilson has not done me the honour of referring, amidst his many useful references, to my own published work, I think he will not deem my suggestions more than warranted if I ask him, at his leisure, to refer to an exhaustive contribution on the subject which I delivered before the Surgical Section of the British Medical Association at Exeter in 1907, and published *in extenso* in the Association's Journal for October of the same year, p. 895. My main argument was then, and is still, that the reasons for the selection of any particular course for an abdominal incision, whether above or below the umbilicus, should be based on sound physiological and anatomical grounds; and that the more this aspect of the question is exclusively considered, the more will it be found that transverse and not vertical incisions are the true lines of election.

I am, Sir, yours faithfully,

Glasgow, May 8th, 1911. A. ERNEST MAYLARD.

A CONSIDERATION OF SOME CASES OF ADVANCED TUBERCULAR JOINTS TREATED BY ILEO-COLOSTOMY.

To the Editor of THE LANCET.

SIR,—No one, I think, who reads the article under the above title by Mr. Harold Chapple in THE LANCET of April 29th can fail to be deeply interested, and the excellent records of this operation must evoke admiration for the work of Mr. Arbuthnot Lane. A careful scrutiny of the eight cases described, however, raises the question as to whether the operation performed can be regarded as a therapeutic remedy for *tuberculous arthritis*. In the first place, all the patients were children, the oldest being only 12 years of age; secondly, suppuration was present in five out of the eight cases, and of these five, four had chronic discharging sinuses; thirdly, the disease had been in existence for over a year in all but one child, and in two cases four years was recorded as the length of history. It will surely be conceded that where chronic sinuses have been present for any length of time the disease ceases to be a true tuberculous arthritis, and, especially in children, *amyloid disease* is apt to develop.

It is the onset of amyloid degeneration in patients suffering from joint and bone disease with persistent sinuses which determines the incurability of the condition, and, oftentimes, the fatal issue of the case. Now it is clear that in Case 4 of Mr. Chapple's series this condition was present, as the boy had hectic fever, diarrhœa, and albuminuria, and I think most authorities will agree that such are the *late* symptoms of this disease. What are the early symptoms of amyloid disease? The answer to this question is difficult, for there are none which can be described as characteristic of the early stages unless constipation and staining of the skin, present in nearly all Mr. Chapple's cases, can be so regarded. I venture to suggest that the benefits of Mr. Lane's operation of excluding the colon may be in the direction of arresting or preventing amyloid degeneration of the viscera, and I should be glad if Mr. Chapple would give some further details as to the presence or absence of "amyloid symptoms," both before and after operation, in his series of cases. Enlargement of the liver and spleen are doubtless late signs of amyloid disease, but their condition might well have been recorded, together with a report on the urine.

Experimentally, amyloid disease has been produced by repeated inoculation of cultures of the staphylococcus pyogenes aureus and of the bacillus pyocyaneus. Is it not possible that in the human subject the toxins which cause this degeneration of the viscera are absorbed from the large intestine? It is certainly the abdominal organs which exhibit demonstrable amyloid change more commonly than other viscera. Another fact, which, if my theory is correct, is easily comprehended, is that Mr. Chapple appears to be less certain as to the cure of those cases where sinuses were not present. In these probably there were no beginnings of amyloid disease. If, therefore, Mr. Lane has hit upon a satisfactory method of treatment for amyloid disease, great progress has been made, and I think this suggestion appears more rational than that tuberculous arthritis can be cured by exclusion of the colon.

I am, Sir, yours faithfully,

Wimpole-street, W., May 2nd, 1911. J. E. ADAMS.

CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH, DUBLIN, 1911.

To the Editor of THE LANCET.

SIR,—May we, through the medium of your journal, request all those who intend to contribute papers to the Congress of the Royal Institute of Public Health (to be held August 15th to August 21st, 1911) to send in the titles to the honorary secretaries of the section or to the undersigned at their very earliest convenience.—We are, Sir, yours faithfully,

HENRY CAMPBELL,
CHARLES A. CAMERON,
E. MAGENNIS,
} Hon. Secs.

Offices: Municipal Buildings, Cork Hill, Dublin, May 9th, 1911.

THE NATIONAL INSURANCE SCHEME AND MEDICAL FEES.

To the Editor of THE LANCET.

SIR,—The proposed insurance against sickness, invalidity, and unemployment is the inevitable result of the fact brought out by the recent Royal Commission that there is a large class of the community in the position of potential pauperism and in need of assistance when the thin line of independence has been crossed. Sickness is responsible for a third of this poverty, and has been called recently "the bedrock of pauperism." Bound up with the cost of sickness is the expense of medical attendance, which, in the interests of the nation as well as the individual, should be adequate and efficient. Hitherto, it has been slipshod from no fault of the profession, but from the inability of the patients to pay reasonable fees, without which medical men could not exist. Sooner or later the provision of medical attendance must be

made in connexion with the insurance scheme, and the community, as is just, be asked to contribute to this necessary part of the project, the burden of which has been borne hitherto by the profession alone until it has proved too heavy. The time has come for a reasonable scale of fees to be fixed for medical work, as has long been done for the legal profession, and the present scandalous standard must not be taken as the model on which it has to be built. Employees, employers, and even public corporations have succeeded in beating down a disunited and overcrowded profession to starvation rates, and these must not be recognised as anything else than sweating terms. On the other hand, the profession should not be guilty of the folly of making demands which cannot be accepted by the Government, and which would be looked upon as extortionate by the public. However valuable it is or may think itself it cannot afford to force its demands on an unwilling nation, for there are plenty of needy men in its own ranks who would readily face the ostracism of their brethren if they could be assured of the sympathy of the public, and there are hosts of people, such as midwives, &c., into whose hands much medical work is even now passing, ready to absorb more of it.

The idea that the State is at the back of the scheme and has an unlimited purse is tempting some medical societies to make larger claims than they would otherwise do. This is rank Socialism and in no way differs from the Social Democratic Party and Independent Labour Party in their demands for State bounties. We cannot without loss of dignity and independence ask our neighbours to pay us fees greater than we would otherwise demand from people of narrow means. The guinea fee for a confinement becomes two or even three for a working man's wife; a dislocation or fracture is to cost £5; vaccination 5*s.*; and the capitation rate per man, woman, and child 15*s.*, and so forth. It will not do.

The intentions of the Government being now disclosed, possibly in a tentative form, will be a disappointment to those who are responsible for advancing such claims as I have referred to above. The plea that it is necessary to make greater demands than were meant to be accepted savours too much of commercialism. Since the scheme suggests a uniform rate of contribution at all ages, and only slightly reduces the benefits between 50 and 65, the heavy initial cost admitted by the Chancellor will press hardly on the profession in increased attendance at the older ages, and the capitation rate of 4*s.* is grossly inadequate. It will also come as a blow that the friendly societies, however carefully selected, are to administer the benefits. The profession must have an adequate share in the administration of those funds which affect medical attendance, or the old friction with the friendly societies will continue as heretofore. I will not presume as an individual to criticise so complicated a scheme, but trust that a conciliatory attitude will be maintained on both sides in carrying out this great reform.

I am, Sir, yours faithfully,

May 10th, 1911. M.D.

EMOLUMENTS IN THE INDIAN MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—The profession in England is apparently beginning to realise at last that the prospects of a career in the Indian Medical Service are not what they used to be. It seems, at any rate, that this is the case from the paucity of candidates that have appeared at the last three examinations. That there is much discontent in the service there is no doubt, but as long as candidates can be induced to appear for examination, even in small numbers, there appears to be very little hope of redress. There will always be candidates, even with the conditions as they are at present, as there will always be a large number of natives of India ready and willing to enter the service, as gazetted rank gives them a standing which they otherwise would not have.

For the European, however, the service has none of the attractions that it used to have. In the past these attractions were: cheap living, cheap sport, small wages to servants, a rupee of large purchasing power, a shorter and less expensive medical course, and for those in the civil branch of the service private practice and good fees. What a contrast do we find now: cost of living increased 100 per cent., servants' wages increased 100 per cent., purchasing power of the rupee decreased 50 per cent., a longer and more specialised medical course, practically no private practice outside large towns, and even these getting gradually less, and *pay increased on the average by 10 per cent.* These are bald facts which require no proving.

In the other Indian services, owing to paucity of competition, the pay has been substantially increased and the conditions of service improved, so much so that a casual glance into any provincial civil list will show that in some cases officers of 25 years of age in those services draw as much as officers *10 years their senior in age in the Indian Medical Service.*

In view of the above it is difficult to understand why anyone elects to enter the Indian Medical Service when much better prospects at about one-third the initial expenditure in both money and time are offered in the other Indian services.

The facts seem to be overlooked that Indian Medical Service officers enter the service on the average later in life than officers in *any other Indian service*, that the expenses of their education are greater than any other, not even excluding the Indian Civil Service, and that they are still spending money on their education while their school contemporaries who have entered other services are earning it.

It is to be hoped that the time has come for the Indian Government to substantially increase the emoluments of Indian Medical Service officers if they wish the service to maintain its glorious traditions.

I am, Sir, yours faithfully,

April 9th, 1911. M.B.

*** We comment elsewhere upon this letter.—ED. L.

CONGRESS OF THE GERMAN SURGICAL ASSOCIATION.

(FROM OUR BERLIN CORRESPONDENT.)

THE German Surgical Association held its annual meeting in Berlin from April 19th to 22nd, Professor REHN (Frankfort) being in the chair.

Disinfection of the Hands and of the Field of Operation.

Professor KÜTTNER (Breslau) had made a collective investigation in 210 clinics and hospitals of Germany on the methods used for disinfection. A reliable disinfection was difficult of attainment for three reasons: first, because the bacteria penetrated to the deeper layers of the skin, to the hair-follicles, and sweat glands; secondly, because they were embedded in fat, so that the action of disinfectants became inefficacious; and thirdly, because the time available for disinfection was too small to destroy the germs. There were three ways to improve disinfection. 1. More efficacious chemical compounds must be found. The modern mercurial preparations, such as iodide of mercury, oxycyanide of mercury, and sublamin, were by no means preferable to sublimate; and the same was the case with formalin; phenol, kresol, and chloride compounds gave relatively the best results. 2. The mechanical methods of disinfection of the hands must be made more reliable; the use of sand, marl, soap, &c., proved to have no advantages. It was tried to fix the bacteria to their place by tanning the skin with alcohol, and it was found that the disinfection by pure alcohol was as efficacious as the former complicated methods. A solution of soap in spirit gave bad results. 3. To avoid the hands coming in contact with the wound impermeable covers were used, especially rubber gloves; they were efficacious, but very expensive, and had the additional drawback that they often burst. They must be sterilised by steam. The disinfection of the field of operation had made the greatest progress by the method of Dr. Grossich—viz., painting the skin with tincture of iodine; it had become nearly the standard method, being in use in 187 out of 210 clinics and hospitals.[1] Eczema could be avoided by using a 5 per cent. instead of a 10 per cent. tincture and only a fresh preparation and abstaining from the use of other compounds with the iodine.

Dr. NÖTZEL (Saarbrücken) spoke on the disinfection of

[1] THE LANCET, 1910, vol. i., p. 336.

infected wounds, and stated that the antiseptic compounds were inefficacious in these cases. It was quite futile to use dressing material impregnated with antiseptic compounds. Dr. Nötzel had come to that conclusion by numerous researches concerning especially iodoform and balsam of Peru. Mechanical processes were preferable, such as Friedreich's method of freshening the edges of a wound, a propagation of the infection being avoided when it was done within six to eight hours. They must further recur to the old methods of plugging and draining. The results of passive congestion, as devised by Professor Bier, were not yet beyond doubt.

In the discussion Dr. VON OETTINGEN protested against the administration of iodine without cleaning the skin. He had found in the war in Manchuria that eczema was liable to develop in the dirty skin of the soldiers. He recommended a mastich preparation.

Dr. THÖLE (Hanover) had found on bacteriological research that the action of the alcohol in retaining and fixing the bacteria was hindered by the application of rubber gloves. The best method was to avoid touching the wound with the fingers at all, as recommended by Professor König.

Dr. DE RUYTER (Berlin), opposing Dr. Nötzel, said that iodoform was efficacious because bactericidal substances developed in the wound.

Dr. KÜMMEL (Hamburg) warned the Congress against the exaggeration of bacteriologists who desired to attain an absolute absence of germs in the wound—that was unnecessary; but what was of importance was a good healing of the wounds, and they had generally come to satisfactory results in regard to that in different ways.

On Graves's Disease.

Professor THEODOR KOCHER (Berne) found in every case of Graves's disease a hypersecretion of the thyroid gland and an increase of iodine in the secretion. In animals Graves's disease could be produced by injection of thyroid liquor, glandular substance, or thyreoiodin. In the human species the administration of iodine to patients with Graves's disease made the symptoms worse. The blood of the patients showed leucopenia and an increase of the mononuclear cells. From a clinical standpoint Professor Kocher distinguished a sympatheticotropic and a vagotropic form, the secretion of the gland acting sometimes more on one than the other of the two nerves. The sympatheticotropic form showed exophthalmos, tachycardia, and glycosuria; the vagotropic form digestive troubles and abnormalities of the blood. The causes were mental emotion, administration of iodine in struma, infectious diseases, and hypersecretion of the sexual glands. Graves's disease being due to a hypersecretion of the thyroid gland, a rational therapy must consist in a removal of glandular tissue. Generally the symptoms improved according to the quantity of the tissue removed, failures happening only when too little a quantity was removed. Professor Kocher had performed 721 operations in 535 cases, the mortality being 17—3·1 per cent.; 3 died in narcosis, 3 from Bright's disease, 3 from thymic state, 2 from embolism, and 6 from pneumonia. It was interesting to note that the blood became normal after a successful operation, together with an improvement or disappearance of the other symptoms. An operation performed in an early stage of the disease was successful and without danger.

Dr. ALBERT KOCHER (Berne) gave a report of Histological Researches in Graves's Disease, showing a connexion between the histological appearances and the clinical symptoms. The quantity of colloid material, he said, was inversely proportional to the gravity of the symptoms; in typical cases there was a proliferation of cylindrical cells.

Professor GARRÉ (Bonn) mentioned the close connexion between Graves's disease and persistent thymus gland. He was of opinion that the symptoms of the disease were aggravated by the enlarged thymus.

Professor VON EISELSBERG (Vienna) agreed with Professor Kocher that the results of operations were better the earlier they were performed. Unfortunately the patients were, as a rule, sent too late to the surgeon. Out of 71 cases operated upon by him six died. Of the remainder, 23 were completely cured, as every symptom of the disease disappeared.

Professor HILDEBRAND (Berlin) had operated upon 100 cases; five died, of whom two only showed persistent thymus; in the others death was due to cardiac weakness.

Professor KÜTTNER reported that he had under his care 85 cases of Graves's disease during the past year in the Breslau surgical clinic; 25 of them were not operated upon, the result being that none of them was cured. Of the cases operated upon, 37 were seen some time afterwards, and it was found that 33 per cent. were completely cured.

On Transplantations.

Professor LEXER (Jena) gave a detailed report on the present state of the question of skin-grafting and other transplantations. The technique, he said, was not very different from Reverdin's and Thiersch's methods. Professor Lexer had made experiments on the transplantation of skin taken from the patient himself (autoplastic), or from another individual (homoplastic), and had found that autoplastic was almost always the more successful; the flaps apparently coalesced with the substratum, but after some weeks were shod by strong granulations like a foreign body. Concerning the mucosa, Professor Lexer reported a case where he had made a transplantation of the mucosa of the appendix into a defect of the urethra. Good results were obtained by the autoplastic transplantation of fat for the purpose of supporting scars, filling out defects, or covering nerves. The transplantation of muscles gave unsatisfactory results; in the transplantation of nerves the grafted nerve serves only as a conductor for the axis-cylinder process growing from the proximal end. The results in grafting blood-vessels were better. Professor Lexer had successfully grafted a piece of the saphena vein into the wall of an artery. Homoplastic transplantation of vessels caused thrombosis more often than autoplastic transplantation. The experiments to replace other tubular organs, such as the urethra and the common bile-duct, were not yet finished. In the transplantation of tendons, which was frequently performed with success, the autoplastic method was preferable, and the same was the case with bones. The bone, however, became absorbed, but regenerated from the periosteum. As the vital energy of the periosteum persisted some time after the death of the individual, bones from dead bodies might be used. It was possible to transplant in this way joints or parts of joints, as shown by Professor Lexer in a case in which he had taken from a capital criminal the knee-joint eight hours after the execution, and had transplanted it into a patient where it has now definitely healed up.

Professor KÜTTNER showed a specimen from a case in which he had replaced the upper end of the femur by a similar piece of bone taken from a dead body two hours after death. Previous to implantation the piece was preserved for 24 hours in Ringel's solution. After 10 months the extremity had a perfectly good function and was moveable. The patient died about a year after the operation, and the necropsy showed bony union.

Professor VON EISELSBERG reported a case in which he had implanted a piece of the saphena vein for perineal hypospadia. The implanted piece was cast off when the catheter was removed, but another piece was then re-implanted and healing ensued.

Professor LEXER showed a girl who had developed complete stenosis of the œsophagus after drinking sulphuric acid. Gastrostomy had been performed by a surgeon to allow feeding. Professor Lexer then took a piece of the jejunum previously fixed to the stomach and brought it under the skin to the region of the mammæ. A cutaneous tube was then formed from the neck to the opening of the implanted jejunum. Œsophagotomy was then performed, and the upper end of the œsophagus was united with the implanted jejunum. These operations were, of course, performed at different times—the last in September, 1910. The result has been that the patient is now able to swallow and to eat without difficulty. It was shown how a bolus glided down through the artificial œsophagus to the stomach.

(To be continued.)

THE Council of the Pharmaceutical Society has elected Professor W. E. Dixon, M.D. Lond., Professor of Materia Medica and Pharmacology at King's College, an Honorary Member of the society in recognition of his distinguished scientific work.

THE INTERNATIONAL PLAGUE CONFERENCE AT MUKDEN.

(FROM OUR OWN CORRESPONDENT.)

APART from the purely scientific aspect, this Conference is one which has a far-reaching, deep significance in the Chinese Empire, as it has been summoned by a country which is behind in what the West regards as human progress. My previous notes have often described the general apathy to health problems and the unchecked spread of epidemics. Much has been said of late years about the "Awakening of China" in other subjects, with varying success. It has been left for this recent Manchurian epidemic to awaken the giant to the necessity of throwing off the trammels of the empiric and superstitious system of medicine followed in the past and to adopt scientific modern medicine in its stead where public health is concerned. The manner in which the Chinese have tackled the problem suddenly put up for solution in Manchuria has astonished foreigners. They employed the assistance of all the European medical men in North China (a mere handful), made full use of it, and threw every available Chinese foreign-trained medical man into the field, between whom and the foreign medical men there was cordial coöperation. The efforts of these practitioners would, however, have been of little avail were it not for the faithful bravery of the thousands of soldiers, police, and helpers who did their duty regardless of the risks they ran.

OPENING ADDRESSES.

The Conference was opened on April 3rd by the Viceroy of Manchuria, HSI LIANG.[1] A message of welcome was sent by H.I.H. the Prince Regent, and after that the Imperial Commissioner, the Honourable SAO KE A. SZE, read the following address, giving the delegates an idea of the virulence of the epidemic and the problems the Central Government would particularly desire to see solved:—

GENTLEMEN,—I am deputed by the Central Government to extend to you their hearty welcome, and through you their thanks to your respective Governments for the trouble you have taken in coming to this Conference.

During the past five months North China, and especially Manchuria, has been ravaged by one of the most fatal epidemics, in point of view of infectiousness and high mortality, that have occurred in living memory. Small-pox, cholera, bubonic plague, and similar diseases have no doubt a high mortality-rate, but pneumonic and septicæmic plague are worse than all these. I believe I am correct in putting the death-rate at almost, if not exactly, 100 per cent. The conditions which have produced this epidemic are not such as can be easily altered without interfering with trade, with the daily bread of many thousands of men, and with the national habits and customs of our people. If we are to believe the able scientists who have already studied the subject, there is present in North-West Manchuria as well as over the greater part of the mountains of Asia a marmot (the tarabagan), a small rodent animal that suffers more or less permanently from swellings, in which plague bacilli are found. This animal is hunted for its fur, and it was among the thousands of trappers who meet annually in North-West Manchuria to capture it that the first outbreak occurred.

The conditions of climate are of the worst kind. The winter temperature falls to 40 below zero, and it has been described as one of the coldest places in the civilised world. In such bitter cold no man remains out-of-doors a minute longer than he can help. The earning capacity of the people is then at its lowest, and it is not a wonder they keep huddled together in their small houses in a way that is most favourable to the spread of such a highly infectious disease as pneumonic plague.

I am sorry to say you will have no difficulty in finding that the sanitary conditions of many of the towns and villages are defective, but I believe they are no worse than those of all large countries in the Near and Far East. As the British Government knows, from its experience in India, effective sanitation is a very difficult problem indeed in such a vast country as ours, with so many millions of people to deal with. We will welcome any practical suggestions you may be able to make on this subject, which is one that we recognise as capable of amelioration.

One fact in this epidemic which stands out before all others is that it has spread mainly from town to town *along the railway lines of communication*. As in many other instances, we were taken unawares. It was known than an epidemic had occurred in Mongolia and even at Newchwang, without spreading any great distance. It was not, however, recognised that this epidemic would be one of such unheard-of virulence, and when this was realised, the epidemic had already begun to spread southward. Our great national festival takes place at the time of the New Year, and every Chinese who can do it makes strenuous endeavours to return to his home. Many thousands of returning coolies, if not taken by rail, become foot passengers and walk across country. No cordon has as yet been found effective, even by the employment of large numbers of troops, that could prevent people slipping through in such a vast tract of country. Quarantine measures were enforced on the railway, but probably not soon enough. The experience we have gained this time makes us hope to adopt measures that will admit of ready enforcement in the future. No doubt some of you gentlemen, from your previous experience, will be able to help us with useful advice as to what methods are best for quarantining large bodies of the irresponsible coolie class.

You will receive accounts from the different doctors employed on anti-plague duty as to how they have dealt with the segregation of contacts and suspects, and how they have managed the isolation hospitals for plague-stricken cases; and we will welcome your helpful criticisms on this subject, for we feel that the time has come for us to adopt such measures as will prevent future repetitions of the disasters we have witnessed when whole households have not seldom been wiped out within the course of a few days.

While the Chinese people have not such caste prejudices as are present in some other oriental races they are apt to resent what they consider undue interference with, or intrusion into, their family life; and it has been a difficult official duty for us to carry out such apparently cruel work—the quick separation of a plague case from his or her family relatives, removal of one member to the plague hospital and others to segregation camps, and so on.

While not wishing to lay out in too much detail the work we invite you to consider, and while at the same time recognising that the medical and scientific aspects of the question will receive your full share of your attention, I would venture to ask you to discuss more especially the following points:—1. The origin and mode of spread of the epidemic and the management of it. 2. Is it connected with an endemic focus in Manchuria, and, if so, what are the best measures to combat that focus? 3. Has the pneumonic plague bacillus greater toxic power than the bacillus that causes bubonic plague? In other words, why should a bacillus which so far as we know has the same microscopical appearances and answers to the same bacteriological tests, cause a pneumonic and septicæmic epidemic here, and only give rise to bubonic plague in India and other places, where pneumonic cases only incidentally occur? 4. How is it that, according to all the medical evidence we possess, the epidemic has been purely a human one, with no evidence of rat infection? 5. On what circumstances does the difference between pneumonic and bubonic plague depend? 6. Is aerial infection possible or does it depend solely on chance contagion? 7. Is this bacillus able to exist for months outside the human body, and if so under what conditions? This is for us an important question, as it may mean a possible outbreak next winter. 8. What methods should we follow in order to prevent if possible a recurrence? 9. To what extent may trade be carried on under such unusual epidemic circumstances—e.g., the valuable bean trade, and the enormous export of skins and furs? 10. Do you advise the institution of wholesale inoculation on a systematic plan of towns and villages? 11. Are such active measures as the burning of plague-stricken houses advisable or, from your experience, can a system of disinfection of premises suffice? 12. How far are vaccines and serums reliable as means of protection and cure in such cases?

Gentlemen, in asking your consideration of these questions and any other suggestions which you may from your past experience see fit to make, I will on behalf of my Emperor and Government respectfully beg of you to ever have the practical side of the subject in view. Science comes often into conflict with daily life, just as it is ever aiding it. What may be scientifically and theoretically desirable may, when the time comes for it to be put into actual practice, be found impossible to carry out, but we are determined to meet this enemy henceforth armed with the best knowledge we can obtain. We will thoroughly consider your recommendations and whenever possible act up to them. The day has now gone past when any Government can allow an epidemic to cause such ravages among its people unchecked not only for economic but also for humanitarian reasons.

Before closing, may I introduce to you Dr. Wu Lien-teh, who will act as chairman of your meetings? Dr. Wu has for the past three months been living in the worst plague-stricken area, studying the disease in every aspect. He has had a distinguished career in England and has worked in French and German laboratories. We have instructed him to see that the words of every member of this conference are received with careful attention. We have also appointed Dr. W. H. G. Aspland to be medical secretary. Dr. Aspland rendered splendid service at Fuchiatien throughout the epidemic.

Finally, I may add that facilities for railway travel will be given to the members whenever necessary, and I trust the arrangements made by my Government for your residence will be found comfortable by you during your stay here.

Dr. Wu Lien-teh was appointed chairman of the Conference and Dr. Kitasato chairman of the Bacteriological Section.

QUESTIONS FOR DISCUSSION.

The following questions for discussion regarding the epidemic of pneumonic plague were laid before the Conference:—

A. *Epidemiology.*—I. The origin of the epidemic. II. The diffusion of the epidemic throughout the affected areas in relation to time and place and the influence on its dissemination of roads, rivers, railways, and shipping. III. The relation of animal plague to the epidemic—(*a*) tarabagans; (*b*) rats; (*c*) other animals (pigs, dogs, horses, &c.). IV. The character of epidemic curves as illustrated in cities and districts. V. The relation of the epidemic to climatic influences (atmospheric temperature and humidity). VI. Has there been a spontaneous decline in the epidemic—i.e., apart from the influence of preventive measures—and if evidence for this exists, what is the cause of the decline? VII. Data relating to the origin of infection in villages or towns—(*a*) The importation of persons incubating the disease, or sick persons, or healthy carriers of the disease; (*b*) the importation of infected clothing or merchandise. VIII. The infectivity of the plague patient—(*a*) The infectivity of the excreta; (*b*) the range of infectivity of the patient, brought about by the expulsion of plague bacilli in the act of coughing, spitting, speaking, &c.; (*c*) evidence as to the possibility of transmission of the infection from plague patients to contacts by the agency of human fleas; (*d*) the infectivity of corpses. IX. The infectivity of houses in which one or more plague cases have occurred—(*a*) Danger from the contamination of floors, k'angs, food, and vessels for food, &c., by sputum of plague patients; (*b*) have

[1] See THE LANCET, April 29th, 1911, p. 1163.

fomites played any part in the spread of the epidemic? (infected clothing, &c., as agents in the spread of infection?); (c) is dust capable of carrying infection? (d) artificial heating of rooms and ventilation or the absence of ventilation of rooms as factors which may influence the infectivity of houses; (e) the relation of overcrowding and the habits of the people to the spread of the disease within houses; (f) the duration of infectivity of rooms or houses. X. The question of variation in virulence of the bacillus at different stages of the epidemic, as evidenced by the average duration of the illness, by the case mortality, and by the inoculation of animals. XI. Evidence as to natural immunity in persons exposed to infection. XII. The question of the danger of transmission of the infection to rats during the epidemic—(a) By the sputum of plague patients; (b) by gnawing exposed plague corpses; (c) by inhalation of plague bacilli; (d) by fleas and other insects. XIII. Statistical data—(a) The death-rate from the disease in different communities; (b) age incidence; (c) sex incidence; (d) race incidence; (e) the incidence on various classes of the population as judged by their social condition; (f) occupational incidence; (g) incidence amongst contacts at different stages of the epidemic; (h) statistics relating to the liability to infection of doctors, students, nurses, attendants, and members of the sanitary staff; and (i) case mortality in different places.

B. *Clinical data.*—1. Types of the disease met with during the epidemic apart from primary pneumonic plague—e.g., primary septicæmic plague (?), bubonic plague (?), intestinal plague (primary or secondary) (?), pestis minor (?). 2. Incubation period. 3. Symptoms. 4. Diagnosis: (1) Differential diagnosis; (2) bacteriological diagnosis—(a) the examination of the sputum, (b) the examination of the blood, (c) lung puncture, (d) spleen puncture. 5. Prognosis. 6. Treatment—serum, vaccines, chemo-therapy, drugs.

C. *Pathology and bacteriology.*—1. Morbid anatomy (especially in relation to the mode of infection in plague pneumonia). 2. Characters of the strain of bacillus isolated during the epidemic: (1) Cultural tests; (2) pathogenicity to animals; (3) agglutination tests; (4) infectivity after exposure to varying conditions—e.g., drying, sunlight, freezing, alternate freezing and thawing, &c.

D. *Measures employed to combat the epidemic.*—I. Prophylactic inoculations with vaccines and sera. 1. Evidence as to protection conferred by plague vaccines against a pneumonic infection. 2. Evidence as to hypersusceptibility to infection immediately following inoculation with vaccine; the negative phase. 3. The comparative immunising properties of vaccines prepared from "rat" strains, "human bubonic" strains, and "pneumonic" strains. 4. Local and constitutional effects produced by vaccines and sera obtained from different sources. 5. The value of anti-plague sera administered as a prophylactic either alone or with vaccines. II. Measures to be taken to limit the spread of infection in an infected town or village. 1. Sanitary cordon to prevent ingress of possibly infected persons or goods. 2. Adoption of measures to limit the intercommunication of members of the community: (1) Closing of schools, dispensaries, churches, theatres, pawnshops, inns, brothels, factories, laundries, &c.; (2) stoppage of tramways, rickshaws, and other means of conveyance; (3) division of towns into sections and the segregation of the inhabitants in each section by the enforcement of quarantine regulations. 3. Education of the people by means of public lectures and the issue of pamphlets and popular bulletins. 4. The establishment of hospitals: (1) For plague cases; (2) for suspect cases. 5. The establishment of quarantine camps: (1) Contact quarantine camps; (2) segregation camps for certain classes of the community and for immigrants. 6. Notification of sick persons and of corpses found in houses or streets and of coffins sold; house-to-house visitation. 7. Measures for disinfection: (1) disinfection of plague houses and of articles suspected of being infected, including the burning of houses; (2) the efficacy of various disinfectants (lime, carbolic acid, perchloride of mercury, sulphur fumigation and formalin) and the comparative value of various methods of disinfection, with special reference to the difficulties encountered in disinfection work, owing to the severe climatic conditions prevalent during the epidemic. 8. Methods of removal and disposal of plague corpses. 9. Organisation of the sanitary staff. 10. Precautionary measures to be taken by those attending on the sick or concerned with the removal and disposal of the dead: (1) inoculation with plague vaccine; (2) baths; (3) masks, goggles, overalls, gloves, &c. III. Measures to be taken to prevent a widespread diffusion of infection. 1. Sanitary cordon to prevent egress of possibly infected persons or goods. 2. Railway quarantine of passengers and goods. 3. River quarantine of passengers and goods. 4. Sea quarantine of passengers and goods. 5. Control of coolie migration.

E. *The effect of the epidemic on trade.*—Soya bean trade; wheat and flour trade; skins, furs, human hair, &c.; coal; railway traffic; other trades.

SECOND DAY (APRIL 4TH).

On this day Dr. WU LIEN-TEH read his presidential speech,[2] after which there was an adjournment for the day as an act of homage to the medical men and workers who had died while combating plague.

THIRD DAY (APRIL 5TH).

After the reception of telegrams from various medical societies and plague bureaux Dr. S. C. CH'UAN, one of the Chinese delegates, read a speech dealing with the origin of the epidemic. He described the journey he took to the town of Manchuria, where the first cases of blood-spitting occurred and the discovery in the Russian railway hospital that the cases were pneumonic plague. He noted the habits of the tarabagan hunters and the signs of disease among the tarabagans when plague-affected. They become deaf, their eyes red and partially blind, their paws bloodless, and they creep along slowly and unsteadily. The hunters diagnose the disease in the freshly killed marmots by making a slit in their paws. If these bleed the animals are healthy; if not they are diseased.—Professor ZABOLOTNY said that the question of infection starting through the medium of the tarabagan was an open one, and although there seemed to be every probability that this supposition was correct the Conference must approach the matter with an open mind.—Professor KITASATO agreed that the responsibility of the tarabagan must be discussed as a fact not yet bacteriologically proved.—Dr. BROQUET (France) said there had been, in India and Europe, epidemics of pneumonic plague which were not introduced directly by animals.—Professor SHIBAYAMA stated he had experimented with a tarabagan and found that it was not so susceptible to plague as the rat. He had given it a subcutaneous injection of 1/1000th part of a loop and the animal died seven days later. In the post-mortem examination there were very few alterations in the internal organs.—Dr. G. F. PETRIE (England) asked whether the tarabagan infected by Professor Shibayama was infected with a pneumonic strain from the recent epidemic, and this was replied to in the affirmative.

Dr. G. D. GRAY (England) then spoke on "The Diffusion of the Epidemic throughout the Affected Areas in Relation to Time and Place, and the Influence on its Dissemination of Roads, Rivers, Railways, and Shipping." With the aid of maps he traced the progress of the epidemic by railway, which had been the main factor in its spread, and showed the lines of infection to towns situated some distance from the railway.[3] Instances were also given showing how by intercommunication between outlying villages a network of infection had surrounded some big towns, from which in turn the epidemic was spread by escape of plague-infected people, whose bodies were often found on the roads, in many cases stripped of their clothing by passers-by. The rivers of Manchuria could be put out of account as they were frozen all the winter and were not used as highways by the people.

Dr. KASAI (Japan) read a paper on the Epidemiology of the Plague in Southern Manchuria, and pointed out how the port of Dairen was infected by the crowding in of coolies returning to their homes in Shantung for the Chinese New Year Festival. The inns became crowded and contributed to the spread of plague. It was apparent that Chinese in good circumstances were rarely infected.

Professor ZABOLOTNY (Russia) next addressed the Conference on the Modes of Infection. It had been well known that plague was endemic in Mongolia and Manchuria since 1898. It went from station to station in Manchuria in mixed forms of bubonic and pneumonic. Both types spread in the winter season and generally ended in the spring. During the recent epidemic rodents had taken no part in its spread. There were three methods of conveying germs from one person to another. The first was what Flügge called "tropfchen" infection." That was infection through the particles expelled in breathing. The next was by means of mucus. Dr. Zlatogoroff had mixed plague cultures with an agglutinating substance of high agglutinative power and let them dry and had found the bacilli would remain alive for weeks. This substance by entering the mouth would cause pneumonic plague. The third means of infection was by means of sputum. By the cleaning up of soil and floors it would be converted into dust and thus carry infection.

A discussion followed on the modes of infection.

FOURTH DAY (APRIL 6TH).

The chair was taken by Dr. KITASATO, President of the Bacteriological and Pathological Section.

Professor ZABOLOTNY opened the discussion on the Characters of the Strain of Bacillus Isolated during the Epidemic. The investigations of the Russian staff at Harbin had not yet finished, but had so far given interesting results. While strains from other epidemics had made bouillon turbid, in the case of the Harbin strain the bouillon remained quite clear and the bacilli fell to the bottom. The virulence of these cultures was different. Dr. Zlatogoroff had succeeded in producing very quickly a kind of septicæmia in guinea-pigs, but he had not obtained typical buboes. Whilst in other epidemics guinea-pig experiments gave death in seven to eight days, in this epidemic they died more quickly—mostly septicæmia. The specific serums from Paris, Berlin, and St. Petersburg gave different results in relation to agglutination. The recent epidemic had been of a specially septicæmic character, the pneumonia being

[2] See THE LANCET, April 29th, p. 1117.

[3] See THE LANCET, April 29th, 1911, p. 1156.

finished by septicæmia.—Dr. BROQUET stated that he had noticed also that the culture on agar-agar of the Harbin strain was more agglutinous than the bubonic strain in Saigon.—Dr. ZLATOGOROFF said he had studied 40 other strains of different epidemics from other countries and 20 Harbin strains in agar test tubes, but he had not found any difference. He had only found what Professor Zabolotny had described with regard to bouillon cultures. In gelatine there was no difference. Only the virulence was different in this epidemic. If he gave half an agar culture to a guinea-pig it would die in 36 hours and only very small buboes would be found, while there was acute septicæmia. Other strains killed a guinea-pig in six to eight days and caused characteristic buboes.—Dr. R. P. STRONG (America) asked Professor Zabolotny if he had never obtained buboes in guinea-pigs by means of cutaneous injection with the Harbin strain. In his own experiments at Mukden he found that by cutaneous injection guinea-pigs died after three days with buboes but without marked change in the lungs. Septicæmia was present. He also had observed no difference in growth on agar in 100 cultures.—Professor ZABOLOTNY said that in cases of injection of guinea-pigs with the Harbin strain he had found buboes, but not such characteristic ones as in other strains. Dr. Strong had spoken of cutaneous injection, but he had only spoken of subcutaneous injection.—Dr. MARTINI confirmed Dr. Strong's observations that the Harbin strain with cutaneous injection gave very good buboes in guinea-pigs.—Dr. PETRIE said that human and rat strains inoculated subcutaneously were extremely virulent to the guinea-pig and frequently killed in two to three days. On the other hand, plague cultures from Madras when inoculated cutaneously invariably produced a bubo. He had often got septicæmia without any definite bubonic formation in guinea-pigs.—Dr. BROQUET said that while they fully understood the buboes of naturally infected rats the relation of experimental infection to buboes in guinea-pigs was not yet known, as these animals were subjected experimentally to inoculations so severe that they could not be compared to infection naturally contracted. Under these conditions it was difficult to gauge exactly the defensive reaction of the guinea-pig.

Dr. MARTINI read a paper on Agglutination Tests, recounting his work, already published, and recommending macroscopic agglutination as a form of exact diagnosis which could be got earlier than a reasonable suspicion of plague from injection experiments with animals, especially in the first few cases occurring in an epidemic. In plague pneumonia pure culture could be obtained from the lungs in sputum from which to get an immediate agglutination. He therefore urged agglutination with a specific high standard plague serum as an important measure for making proper bacteriological diagnosis of plague.

Dr. GINO GALEOTTI (Italy) next spoke upon "Toxins." So far as he was aware, he said, Professor Zabolotny's had been the only experiments done on the toxins produced by B. pestis isolated from patients in this pneumonic epidemic. He recounted his experiments showing that plague toxin was a nucleo-proteid not different, from a chemical point of view, from the nucleo-proteids found in animal tissues.

Dr. R. P. STRONG then read a paper on "Virulence." He agreed with Professor Zabolotny and Professor Shibayama that in the present epidemic of pneumonic plague the organism giving rise to the disease had been shown to possess a very high degree of virulence, but this might be more apparent than real. The subject required further study. A probable explanation of its greater virulence than in bubonic cases was that the channel of infection differed, and the bacillus found in the pulmonary tissues a much more favourable and extensive medium for its growth, and much less resistance to its ability to multiply than it did in the lymphatic glands. In primary pneumonic plague the organisms were found in very much greater number in the tissues of the lung than in those of the spleen, a point which would suggest the lung as a more favourable organ for multiplication of this organism. The lung, which in pneumonic plague might be said to represent the primary bubo, contained by reason of the size of the affected area a far greater number of plague bacilli than the primary bubo in bubonic plague. Also, the fact that in epidemics of bubonic plague occasionally small epidemics of pneumonic plague occurred, in which the same mortality and very acute course of the disease were observed, argued that in epidemics of bubonic plague the causative organism might show the same high virulence. No marked loss of virulence had been noted throughout the whole of the epidemic, in which infection had passed from lung to lung without the intervention of any passage through rodents.

(To be continued.)

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

General Council of the University of Edinburgh.

THE statutory half-yearly meeting of the General Council of the University of Edinburgh was held on May 3rd in the university. Among matters of interest to the medical profession was the report of the business committee, dealing with the question of inclusive fees, and the report of the subcommittee on the mutual relations between the bodies concerned in medical education in Edinburgh. The business committee was of opinion that the system of inclusive fees would in many ways be of advantage to the university. Lord Elgin's committee had in its report recommended an increase of £40,000 in the annual grant from the public funds to the Scottish universities, and of that sum £12,500 was to come to the University of Edinburgh. The Treasury had accepted the recommendation of Lord Elgin's committee, but it had accepted it under conditions, one of the most important of which was that the universities should establish the system of composite fees. While recognising the advantages of a system of composite fees, the business committee recommended the council to represent to the university court that such a system should not involve to the student any increase in the total cost of his degree course. The report of the subcommittee on mutual relations stated that the committee had thought it advisable to restrict its inquiries to the subject of clinical teaching as the one requiring most attention. At its first meeting the committee had decided to procure from other medical schools information bearing on the subject, and had sent out a schedule to all the teaching schools in Great Britain and Ireland and to several in America and Canada, while it had also had reports from the Universities of Strasburg and Prague. The publication of Bulletin No. 4 of the Carnegie Foundation on Medical Education in the United States and Canada and Professor Sims Woodhead's Notes on Clinical Teaching had also lightened the labours of the committee. In the opinion of the committee the most pressing reform in Edinburgh was a better ordered arrangement of clinical classes, and this it believed could be effected only by the complete fusion of the intra- and extra-mural sections of the hospital staff. A beginning has been made by the appointment of all the surgeons save one as university lecturers and examiners in clinical surgery, but the next step, of restricting the numbers attending any one clinique, had still to be taken. Next after such a reform would come the formation of a board of studies in each subject, which should agree on broad lines of teaching, the fullest liberty inside these being allowed to each teacher. As so much more attention was now given to individual teaching the committee was of opinion that the fees ought to be increased and the perpetual ticket abolished in clinical medicine, as had been done in clinical surgery. It also suggested that the Royal Hospital for Sick Children, which at present is utilised in connexion with the class of diseases of children, might be brought into more intimate connexion with university teaching, and that Leith Hospital might possibly be utilised for teaching purposes. The resolutions approving the reports were adopted.

Appointment for Sir Donald Macalister.

The Lord President of the Privy Council has appointed Principal Sir Donald Macalister, K.C.B., to be his representative on the International Committee for Post-Graduate Medical Instruction. The headquarters of the committee are at Berlin, and its members consist of representatives appointed by the Governments of Europe and America. Its functions include the organisation and development at home and abroad of courses of practical instruction for medical officers of the various public services and for practitioners generally. The office also collects and distributes to inquirers

information regarding the post-graduate courses already established in this country and on the continent. It is under the direction of Professor Waldeyer and Dr. Kutner, Kaiserin-Friedrich Haus, Berlin.[1]

East Park Cripple Home, Glasgow.

One of the most deserving institutions in Glasgow, the East Park Home for Infirm Children, has issued an appeal for funds to build and support a branch in the country. The appeal is made on behalf of the children who are too weak and ill to be taken to the cripple school, and whose ailments require more prolonged treatment than can be given in the hospitals. At present 130 such children are being cared for in the East Park Home, but many more are waiting admission. Good as is the progress which most of the children make there, the medical advisers strongly urge that a large proportion of the cases ought to be treated in fresh country air. In order to provide and partly endow a country branch the appeal for £30,000 is now being made. The home at present takes in the most urgent cases, in many of which the disease is already so far advanced that it is possible only to alleviate suffering. With the aid of a country branch it is hoped that it will be possible not only to treat a greater number of cases but also at least in some of them to effect a permanent cure.

The Northern Infirmary Management.

A meeting of the managers of the Northern Infirmary was held in Inverness on May 3rd, when the inquiry held by the Local Government Board with regard to complaints in connexion with an outbreak of diphtheria in Inverness was under discussion. It was stated that no substantial grounds for the complaints had been lodged, and that as a result of the inquiry there was found nothing seriously wrong with the general administration. Dr. John Macdonald, medical officer of health for the burgh and county, said the complaints showed the blackest ingratitude towards an institution which served the north, and which, instead of being censured, deserved the best thanks of the community.

Death of Mr. Alexander Buchanan, L.R.C.S. Edin.

At his residence, Tyree, Mr. Alexander Buchanan, medical officer of Tyree, died recently after a short illness. He had held the appointment for 51 years, and was one of the most popular and successful medical practitioners in the Inner Hebrides. Before the advent of the telegraph he had many a stormy passage to the island of Coll, then included in his practice, whither he would be summoned by beacon fires. Mr. Buchanan had also a considerable consulting practice in the Ross of Mull and Iona districts. He was chairman of the school board for many terms of office and was much beloved in the community, several times receiving public presentations. Mr. Buchanan was a native of Callander.

The Health of Kincardine.

At a meeting of the Kincardine county council held on May 4th Dr. W. A. Macnaughton, medical officer of health, submitted his annual report. In the county area the birth-rate was 22·1, the lowest for the last 20 years. The death-rate was 13·3 per 1000. The infantile death-rate was 75·1 per 1000. The mortality rate was 100 in Laurencekirk district, 98·3 in Upper Deeside district, 83·9 in St. Cyrus district, 56·1 in Lower Deeside district, and 41·2 in Stonehaven district. The zymotic death-rate is 0·37 per 1000, and the death-rate from pulmonary phthisis 0·927 per 1000. The cancer death-rate is 0·927 per 1000, as against 0·875 in 1909. Dr. Macnaughton remarks on the fact that within the last 30 years scarlet fever, which used to be of marked severity, usually appears in mild form.—At the same meeting it was proposed and agreed to that on the recommendation of the public health committee the sanitary inspector should be appointed to carry out certain duties under the Housing and Town Planning Act, and on account of the additional work involved it was also recommended that his salary be increased from £170 to £190, and that he be granted clerical assistance.

Kingseat Asylum: Medical Officer's Report.

Dr. H. de Maine Alexander, medical officer of Kingseat Asylum, has issued his annual report. During 1910 77 patients were discharged, as compared with 54 in 1909. The total number under treatment was 563, or 31 in excess of last year. Of the admissions, 38 were curable, 56 incurable, and in 18 cases the prospect of recovery was doubtful. Dr. Alexander says that "insanity is mainly produced by the action of morbid external causes, various physical affections and diseases, infections and toxins, &c. In those in whom a hereditary predisposition is strongly marked, unsuitable education, occupation, or environment play their part. The main treatment of insanity lies in prophylaxis and in combating those factors which tend to produce mental disease." Alcoholism as a cause of insanity in the patients admitted here showed a decrease, and there were more women than men admitted from this cause. Here the seafaring class predominates. The percentage of recovery on admissions was 44·6, the highest since the opening of the asylum. The death-rate was 9·2 per cent. on the average number of residents, and 7·2 on the total number under treatment. Dr. John Fraser, Commissioner in Lunacy, states in this report:—

> The general impression produced by the visit was most satisfactory. The personal appearance and clothing of the patients deserve special praise; due care is evidently taken that the clothing of both sexes and their persons generally are properly looked after. There were few manifestations of excitement during the visit, and no complaint of a reasonable nature was made by any patient. The industrial occupation, exercise, and recreation of the inmates continue to receive due attention.

Dr. John Macpherson, Commissioner in Lunacy, concurred that everything seen in the course of the visit indicated that the institution was being carefully and conscientiously managed.

May 9th.

[1] THE LANCET, Sept. 11th, 1909, p. 812.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Scheme.

THE new measure of the Chancellor of the Exchequer, dealing with invalidity, sickness, and unemployment, has been received on the whole very favourably in Ireland, although it is only natural that objections should be raised, on the one hand, by employers who allege that, as a result of their increased expenses consequent on this measure passing, either wages will be lowered or else the purchaser will pay higher prices to the manufacturer, and, on the other, by the workers, of whom the males contend that they are compelled to pay too much, while the women operatives say the maintenance they are to receive is too small, and, of course, there is no provision for children. One thing is clear, this immense scheme proposes to deal with the bed-rock cause of pauperism—that is, sickness, which causes 30 per cent. of pauperism in England and Wales, and which is responsible for 50 per cent. of Poor-law expenditure. But when it comes into action this measure will naturally tend to dry up many voluntary philanthropic agencies, owing to the greater all-round taxation. Another lesson that medical men in Ireland, and, indeed, everywhere, should specially take to heart is, that if they now stand together they can at last put down the abominable system of "sweating" by many clubs and friendly societies. As to the effect Mr. Lloyd George's scheme will have in Ireland, three things should be recollected: Firstly, Ireland is mainly an agricultural country, with comparatively few industries; indeed, as compared with the great manufacturing centres of England and Scotland, there is really only one large commercial city, Belfast. Now, owing to the predominance of agriculture in Ireland, there is a very large body of small farmers, cotters, and casual labourers who will be very hard to deal with. How are they to be brought in? Compulsorily or voluntarily? They constitute a big class, and certainly the Irish farmer will object very much to pay his share of the contributions in the case of such servants, for he finds it so hard to eke out an existence. Secondly, Ireland at present has a large dispensary medical service in town and country, by which both professional advice and medicine are brought to the homes of the poor in a way and to an extent that do not exist in either England or Scotland. Now the tendency under the Bill will be to lighten the work of this service, with the natural result, vested interests being respected, that the guardians and urban councils will, with natural desire to keep down rates, diminish the salaries of newly appointed dispensary medical officers; indeed, the *raison d'être* of the whole measure being, as Mr. Burns said, "a

scientific attack on the real cause of poverty," and help through the Irish dispensary system being given only on the condition of destitution, it follows that if the Chancellor's scheme succeeds dispensary medical officers will have less to do. Hence, in Ireland, the dispensary medical service is bound to be greatly affected by this measure. Thirdly, there are in Ireland—as contrasted with England and Scotland—far fewer medical clubs and benefit societies. At the present time it is probable the largest friendly societies in Ireland are the Ancient Order of Hibernians (which is political and sectarian) and the Ancient Order of Foresters, though the Rechabites and Oddfellows constitute a big class.

Imperial and Local Contributions for Medical Purposes.

Since the passing of the Local Government Act in 1898 the Treasury has each year contributed to the local authorities sums of money equal to half the expenditure by Poor-law guardians on medical and educational purposes other than for drugs and appliances. In this way half the salaries of Poor-law medical officers come from the State, the other half from the rates. The Local Government Board has intimated to the various boards of guardians in the country that this system is to be altered. Instead of contributing its moiety of each year's expenditure, the Government will, "if the money available to the account is sufficient," advance in each year "half the amount that was paid on their behalf in the financial year ended March 31st, 1902." Apart from the great weight thrown on the local taxes by this change, the matter is of special importance to Poor-law medical officers. They are among the most hard-worked and poorly paid of public servants, their salaries being fixed by the boards of guardians. In the past few years, by hard struggling and with much difficulty, in many unions their salaries have been slightly raised, so that the sums spent on medical purposes have increased considerably since 1902. If, in future, the entire cost of increases of salaries is to fall on the rates, not even the most generous board of guardians, if there be such a thing, will listen to a request for an increase.

The Local Government Board and Anonymous Communications.

There is much discontent in the Poor-law Service, lay and medical, at the practice of the Local Government Board in dealing with anonymous letters. These communications appear to receive the same consideration as properly signed documents. It is almost a weekly occurrence for the Board to forward a copy of an anonymous letter received by it to a board of guardians "for their observations." By such a channel, therefore, any rascal who has a grudge against a Poor-law official can obtain for his abuse the publicity of the local press, besides attracting the attention of the Local Government Board and the local guardians. In some cases the Local Government Board has been so ill-advised as to order a sworn inquiry into the conduct of Poor-law officers on the strength of allegations contained in an anonymous letter. Only a week or two ago the Banbridge guardians were asked by the Local Government Board for their observations on charges contained in an unsigned letter concerning the management of the workhouse infirmary. The guardians, on learning that the letter was unsigned, forbade their clerk to read it, and directed him to inform the Local Government Board of their action.

Convocation of the National University.

At a meeting of the Convocation of the National University last week a resolution was adopted, on the motion of Alderman Dr. J. C. McWalter, stating that—

Students of the old Catholic University and of the School of Medicine have a claim for generous treatment from the National University, and that steps should be taken by the Senate to recognise their claims.

The Prevention of Infantile Mortality in Dublin.

Last January, at a public meeting held in the Mansion House, a committee was formed for the purpose of dealing with the infant mortality of Dublin. A number of ladies who wished to become active workers in coöperation with this committee have attended a course of lectures given by members of the medical profession, with the object of qualifying for the work. Thirty of these ladies have now completed their course. The committee now proposes, with their assistance, to begin its work through the city, and classes are being formed to give instruction to other volunteer workers. These workers will visit poor mothers in their homes and offer advice on the care and feeding of babies, and will also give help in suitable cases to nursing women.

Responsibility for Payment of Medical Officer's Substitute.

A case has arisen between the Athlone guardians and the Local Government Board concerning the payment of a substitute for Dr. Moorhead, medical officer of the Moate district, who was injured while riding in a point-to-point race. A substitute was appointed by the relieving officer, but the guardians refuse to be responsible for paying him. The Local Government Board, on the other hand, have declared that as Dr. Moorhead is incapacitated from carrying out his duties as medical officer, he is entitled to have his substitute paid by the guardians.

Miss Magan's Bequests to Dublin Hospitals.

The Master of the Rolls has now arranged the disposition of the late Miss Magan's bequests to Dublin hospitals after considerable litigation. The amount to be divided was about £21,000. Of this, the Master of the Rolls has directed that one-third should be given to the Adelaide Hospital and one-third to Sir Patrick Dun's. Of the remainder, he has now ordered that £2000 should be held in trust for the Royal Victoria Eye and Ear Hospital and the residue for the Meath Hospital.

The Irish Medical Association.

The Irish Medical Association is to hold its annual meeting this year in Cork, commencing June 13th and lasting three days. The President-elect is Dr. J. Cotter, of Cork. A series of social functions has been arranged, and it is expected that the gathering will be largely attended.

A New Form of River Pollution.

At the half-yearly meeting of the Board of Conservators of the Coleraine District of Fisheries, held in the Coleraine court-house on May 6th, the clerk was directed to communicate with the county and urban surveyors inquiring when and where tar-painting was to be done to roads. This step was taken in consequence of a circular letter received from the Fishery Department in regard to the pollution of rivers and streams by the washings from newly tarred roads. The department has been informed that the tar contains constituents which, if washed into streams and rivers, has a most injurious effect upon fish.

Sad Occurrence at the Belfast Asylum.

On Saturday last, at the Belfast Lunatic Asylum, one of the patients, formerly a professional gardener, who was digging at the time, became seized with homicidal mania and suddenly rushed at an old man, who was sharpening pea-rods with a chopper. Knocking him down with a blow of his spade, though without inflicting on him any very serious injury, he snatched up the chopper with which, in rapid succession, he struck three other inmates on the head. Two of them have succumbed, and the third lies extremely ill in the Royal Victoria Hospital. At the inquest the jury exonerated the asylum authorities from all blame.

May 9th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Unsatisfactory State of the Streets in Paris.

IT cannot be denied that the uncleanliness of the streets of Paris is a reproach to the capital. The Parisians complain of it even more than do the visitors, provincial and foreign. The campaigns undertaken by the press against this condition continue ineffective in face of the obstinacy of the administrative authorities of the Prefecture of the Seine, which has decided not to enforce the existing sanitary regulations, though these would be adequate of themselves, if enforced, to secure cleanliness of the streets and causeways. The streets are swept only in the morning. During the day in summer an abundant watering takes place, which, not being followed by immediate sweeping, transforms the boulevards into lakes of mud, even on the finest days. The causeways are hardly ever washed; although the property owners are legally responsible for the cleanliness of the part in front of their houses, the

shopkeepers and restaurant proprietors alone attend to it. The outcry that arises on all hands against this disgraceful state of things has the support of medical authority, which gives it increased force without, however, affording any greater hope of success in a situation due to the general lack of discipline and weakness of the administrative authority, which is entirely taken up with politics. Professor Blanchard particularly insists on the abominable tolerance that is shown to the excrement of dogs on the causeways, which amounts to an absolute abuse. It is no uncommon thing to see every evening servants leading a dog with a chain to ease itself, and settling it, not in the roadway (doubtless for fear of accidents with vehicles), but in the middle of the causeway itself, while the police make no protest whatever. Fæcal matter is thus left on the causeway for many hours, sometimes even for days, without any regard to its character as a disseminator of disease. It is thus whirled about as dust or clinging to the boots of passers-by is deposited by them on the door-mat on which they wipe their feet, or on which, not infrequently in the poorer quarters, where there is no lodge-keeper, the baker, the milkman, and other provision merchants leave their supplies. It is easy to see how this facilitates disease transmission. Professor Blanchard, as a zoologist, accuses the dog of being the transmitter of many morbid conditions—of tinea tonsurans, tinea favosa, tuberculosis, rabies, scabies, and even typhoid fever, as well as disseminating fleas. Seven years ago he called upon the Academy to control the presence of dogs in abattoirs: he now adds to that insistence the necessity for a severe regulation of the movement of dogs in the public streets.

The Intensive Treatment of Syphilis.

M. Jacquet has recently made known a method of treatment of syphilis which makes it possible to obtain from mercury results much more energetic than those that have hitherto been looked for from it, and which, according to him, are equal to those given by salvarsan, or "606," but offer greater security. In his communication to the Academy M. Jacquet has admitted the brilliant and rapid results given by "606," but he maintains that these results do not offer a sufficient security for the future, for in all countries, even in Germany, it has had to be recognised that recurrence after the use of "606" is by no means rare, and that there is no justification for speaking, as was done at first, of a radical cure of syphilis by this means. Further, the contra-indications that Ehrlich himself, with exemplary honesty, has laid down are numerous, since they exclude all those affected with nervous or cardiac troubles, or liable to albuminuria, hæmorrhages, &c. In M. Jacquet's opinion mercury remains the preferable drug when used in high doses, which is rendered possible by observing certain precautions laid down by him. The intensive treatment advocated by him consists in giving mercury for five successive days, followed by five days of rest, resuming it for another five days, and so on. During five days of treatment he administers the mercury by four different routes at the same time: by the mouth, a pilule of 1 centigramme of the protiodide; by the rectum, 15 grammes of van Swieten's solution in 200 grammes of water; by the skin, with inunction of 5 grammes of mercurial ointment; and finally, by hypodermic injection of 1 centigramme of the biniodide. The patient thus absorbs daily the enormous dose of 8 centigrammes of metallic mercury, passing, however, by different channels of absorption, each of which receives only the quantity that it can normally deal with without trouble. By this procedure, and thanks to the five subsequent days of rest during which the organism can eliminate the metal, M. Jacquet obtains an energetic saturation of the patient with mercury without causing any accident, due attention being paid to the care of the mouth and the teeth as well as to the customary baths. The results, according to the author, should be as rapid, as brilliant, as energetic as those attained with "606," but with every prospect of avoiding the later recurrences. Out of a total of 80 observations bearing on patients in different stages of syphilis he has noticed a sensibly shortened duration of the primary stage, an extremely rapid action on the roseola and the cutaneous syphilides of the secondary stage, though there is little action on mucous patches, in which "606" has a more brilliant, though more transitory, result. In the tertiary period the cicatrisation of gummata and ulcerations and the cure of bony and nervous accidents is at least as brilliant as that by "606."

May 8th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Health of the Austrian Army and Navy.

STATISTICS recently published by the health department of the Austrian War Office show that during the year 1910 there were approximately 340,000 officers and soldiers in barracks, the numbers at any given time being liable to some variation according to the season of the year. Among these troops there were 4484 cases of acute infectious disease with 87 deaths, including 249 cases of typhoid fever with 57 deaths. Some of the more important among the other tabulated diseases and causes of invaliding were as follows: tuberculosis, 709 cases with 161 deaths; venereal diseases, 14,925 cases with 3 deaths; pneumonia, 2507 cases with 49 deaths; and malaria, 773 cases, with no attribution of death to this cause. There were also 26,084 cases of acute bronchitis; 17,220 cases of gastro-intestinal disturbances; 23,999 injuries of a minor nature; 6328 cases of footsoreness due either to unsuitable footgear or excessive training; 1095 cases of trachoma occurring mostly among new recruits; and 206 attempts at suicide, with 79 deaths. In the navy, which numbers only 14,000 men in all, the health conditions were much better. The statistics show only 10 cases of typhoid fever with no death from this cause, 190 cases of tuberculosis, very few cases of bronchitis and pneumonia, but a considerable amount (1087 cases) of venereal and syphilitic disease, and 360 cases of accidental injuries, with 11 deaths. No cases of trachoma, malaria, or suicide were recorded. Altogether the health conditions in both groups are improving steadily.

Prognosis in Cases of Extensive Resection of the Intestine.

At a recent meeting of the Society of German Medical Men in Prague Dr. Lieblein read a paper on the Prognosis after Extensive Resection of the Intestine, especially after resection of the jejunum and ileum. He said that two points must be considered—namely, the length of the part removed and its localisation. It was necessary to know how much of the intestine remained in the body in order to arrive at a prognosis. This could be found only by actual measurement during an operation of the portion which was left. Some authorities believed that removal of part of the jejunum was most detrimental to the organism. Dr. Lieblein, however, has found that the lower portion of the bowel was also able to absorb considerable quantities of nitrogenous material from solutions of peptone, and further experiments have shown that the same holds good also for absorption of fat, the lower part of the bowel being more efficient in that respect than the upper. It was therefore probable that the removal of the ileum was more detrimental to a patient than removal of the jejunum. The conclusions as to the nourishment of patients who have undergone an operation for resection of part of the bowel were as follows. Much albuminous material should be given, together with proteins in the shape of animal food, owing to its easy assimilation; but fat should be consumed in moderation as an excess of fat was not absorbed, but, on the contrary, it hindered the assimilation of protein by mechanical disturbances and caused diarrhœa. Carbohydrates might be given freely and any tendency to diarrhœa should be checked. As a compensation for the unsatisfactory absorption of fat subcutaneous injections of olive oil, as well as enemata of a similar nature, were recommended. Under such conditions of feeding even very extensive resections of the intestine were possible and the patients gained in weight.

The Summer Term at the University of Vienna.

On May 1st the summer term commenced in the University and hospitals of Vienna. The lectures on internal medicine and surgery predominate as usual, but an increase in the number of lectures on neurology and special subjects such as otology, rhinology, and dermatology indicates the growing importance of these branches of medical training. As a rule, the classes are intended for undergraduates, and the

fees are therefore very low, being about 10*s.* 6*d.* or 21*s.* per term. Post-graduate classes, both for Austrians and foreigners, are, of course, more expensive, but at present there are excellent opportunities for such work. The clinics for pædiatrics and for internal medicine are on the point of being removed to the new buildings provided for them, so that in the old General Hospital there will be plenty of room for fitting up laboratories and special observation wards in which much of the post-graduate work will be done. The fees for these classes vary between £1 1*s.* and £4 4*s.*, according to the subject; the attendance is, as a rule, for four weeks or 20 lectures, and as the number admitted to each class is not more than from 6 to 10 the opportunities for individual teaching are very good. There are at present numerous English and American physicians in Vienna, some of whom are well known in the scientific world, taking special classes with the professors. The term lasts until the middle of July, when the vacation classes will commence and will be continued throughout August and September, but only for those who have entered their names beforehand. These latter classes are very well attended by practitioners.

May 8th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

Insanitary Cellar Bakeries in New York.

THE Commissioner of Accounts of New York, Mr. Fosdick, has submitted recently to the mayor of that city a report showing that insanitary conditions prevail in hundreds of bakeries and recommending that the city at once assume jurisdiction under its charter and cease deferring to the State labour law with its inadequate penalties and still more inadequate enforcement by a small inspecting force. Cellar bakeries are greatly in the majority in New York City, as Mr. Fosdick's investigators found that outside such bakeries there were fewer than 100 factory bakeries. The report thus describes these cellar bakeries: "They have for the most part been converted from storerooms for coal, ashes, and rubbish. In order to maintain sufficient light in these places gas must be burned continuously. In many cases the only windows in these cellars were nailed and covered with boards or tin. More than half the bakeries visited had broken, dirty floors, side walls, and ceilings. In more than 30 per cent. of these cellar bakeries flour, lard, fillers, and other materials were stored without regard for cleanliness. Foodstuffs were found under leaking skylights and in sidewalk vaults under leaking coalholes. Open barrels and tubs containing unbaked material were discovered in close proximity to coal, ashes, rubbish, and old rags." Moreover, although section 113 of the Labour Law prohibits sleeping or sleeping accommodations in bake rooms, many places showed that the rooms were used as living quarters for the family. In one place, in fact, the baker was asleep on the mixing vat when the inspector called. The law as to not using the bakeries for sleeping purposes appears to be broken in the case of the great majority of the cellar bakeries of New York. In all respects the inspector found that the cellar bakeries were conducted on most unhygienic principles and that their existence and continuance were a menace to the health of the community. It is suggested that adequate power be given to the New York Board of Health to deal with the matter, and that all bakeries in the city be required to obtain a licence from the said Board of Health.

New Bills in New York State Legislature.

Among the Bills recently introduced into the New York State Legislature of a medical nature or in the interests of public health are the following:—To create a commission to investigate the charges of abuse and cruel treatment in the New York State Hospital for the Criminal Insane at Matteawan; to provide that unsalted and unpreserved meats offered for sale shall be presumed to be tainted within the meaning of the penal law if kept for periods longer than the following: beef, seven months; veal, pork, or sheep, four months; and all other animal food, four months.

The Antivivisection Bill.

The "Bayne Bill," recently before the legislature of the State of New York, to appoint a commission to "inquire into the extent and nature of the practice of experimentation on living animals and the condition of the laws of the State relative to the proper protection of scientific experiments without danger of unnecessary cruelty" was voted down by 34 to 11 in the Senate at Albany, N.Y., on April 26th. It was clearly seen that the only result of the Bill could be to appoint a partisan commission which should make capital for agitation purposes out of its official character.

Training School for Nurses.

The Margaret Fahnestock Training School for Nurses, attached to the Post-Graduate Hospital, New York, recently held its annual meeting for the purpose of giving diplomas to nurses. Twenty-nine nurses received diplomas, the largest number in the history of the school. The announcement was made at this meeting that the new addition to the training school, just east of the present building, at Twentieth-street and Second-avenue, is all but completed and will be ready for occupation in June. This building will practically double the accommodation for nurses in the Fahnestock Training School, furnishing a total accommodation for 145 nurses.

Deaths from Diarrhœa in New York.

Deaths from diarrhœa amongst children in New York City have been of late considerably on the increase. During the first three months of 1911 there were 508 deaths due to intestinal disorders among the children in New York City, as compared with 348 for the corresponding period of 1910. A noticeable and significant feature of the large death roll is that the increase, according to investigations made by the Department of Health, occurred almost entirely among children in institutions. In Mahattan borough, or New York proper, for instance, during the first three months of 1910 there were reported 77 such deaths from institutions and 129 from private families, while during the same period in 1911 there were 200 deaths in institutions and 127 in private families.

American Society for the Study of Alcohol and Other Narcotics.

This society was the first medical society organised for the study of the drink and drug neurosis. Its fortieth anniversary meeting was held in Baltimore, Maryland, on April 19th and 20th of this year.

Death of Dr. Charles Stedman Bull.

Dr. C. S. Bull died very suddenly from heart disease on April 17th. Dr. Bull was born in New York City in 1845, graduated in arts at Columbia University in 1864, and in medicine at the College of Physicians and Surgeons in 1868. He then studied in Europe for several years, devoting his attention mainly to ophthalmology. At the time of his death he was surgeon to the New York Eye and Ear Infirmary, visiting surgeon to the Charity Hospital, professor of ophthalmology to Cornell Medical School, and consulting ophthalmic surgeon to St. Luke's, the Presbyterian, and St. Mary's Hospitals. Dr. Bull was one of the best-known eye specialists of America.

May 1st.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

The Indian Medical Service.

THE Government of India has notified that an officer of the Indian Medical Service who cannot, on grounds of public convenience, be granted study leave in time to qualify himself while in the rank of captain for accelerated promotion, shall have the concession of accelerated promotion open to him for a period of four years after his promotion to the rank of major in the ordinary course. If at any time within these four years he qualifies for accelerated promotion by producing satisfactory evidence of progress in knowledge under the terms of the notification above referred to, his promotion will be ante-dated and his position in the Army List adjusted accordingly, but he will have no claim

to any arrears of pay at the enhanced rate. In commenting on the paucity of candidates for the Indian Medical Service the *Allahabad Pioneer* draws attention to the fact that the regrettable tendency which has affected the Sandhurst and Woolwich lists of late years has not failed to colour the results of the Indian Medical Service examination. For the recent competition for 14 commissions in the latter service only 21 candidates presented themselves. It may be that the appropriate season for Government scholarships is drawing near in this domain as in others, and that men will require to be assured of two years' stability and comfort before settling down to a life-work which, in many eyes, is marked chiefly by slow promotion and restricted responsibility. It is possible, however, that the Station Hospital proposals may give the required fillip as they take effect. Should next year's list shrink to shorter length, the experiment, one imagines, will have found a strong argument in its favour.

Sanitation in Eastern Bengal and Assam.

The improvement of the sanitary arrangements of the permanent and summer capitals of the province of Eastern Bengal and Assam is a matter of more than local interest, and considerable attention has been directed to this question. Valuable recommendations have been made by the Sanitary Commissioner with the Government of India and the Sanitary Commissioner of the province, and the Station Committee in Shillong has initiated various improvements for the sanitary arrangements of the station. A project has been drawn up for the introduction of an underground drainage system, but the cost is prohibitive, and this work cannot be undertaken in the near future unless it is possible to do it in sections. In Dacca also the preparation of detailed plans and estimates is in hand. Apart from this a number of changes have already been made, such as the improvement and supervision of markets and slaughter-houses, the supervision of the sale of food and drink, &c. The Lieutenant-Governor of Bengal hopes that these improvements will be continued so that it may no longer be a reproach that in its sanitary arrangements the capital of the province has a good deal of lee-way to make up.

Tuberculosis in the United Provinces.

Dr. Abinash Chander Banerji, for 30 years a medical practitioner at Allahabad, has just completed the arrangements for establishing a preventorium for patients who have a tendency to develop tuberculosis in any shape. With this object in view, he has acquired at his own expense a fine site of 888 acres at the point of junction of the districts of Hardoi, Shahjahanpur, and Kheri, on which a bungalow can be built capable of accommodating about a dozen patients. This place is situated about half an hour's walk from Uchaulia railway station on the Balamau-Shahjahanpur extension of the Oudh and Rohilkhand Railway which passes through Sitapur and Rosa, in a village belonging to the Panapur estate, and has a small rivulet which is a branch of the Suketa passing through it. The patients will be employed in farming, gardening, and fishing, for all of which the site selected affords ample facilities, while those with sporting instincts will have plenty of game in the neighbourhood. Dr. Banerji proposes to look after the patients himself, assisted by his son Dr. P. D. Banerji, who has just completed his medical education at Edinburgh. The preventorium is, in the first instance, intended for students and clerks of small means whose cases are the most pitiable and among whom the ravages of tuberculosis have not been infrequent in these provinces. If the usefulness of the institution is established and it becomes popular, the question of providing more accommodation and greater facilities for a healthy open-air life will arise.

The late Lieutenant-Colonel J. T. W. Leslie, C.I.E., I.M.S.

The public will hear with much regret of the death at Marseilles of Lieutenant-Colonel J. T. W. Leslie. Colonel Leslie entered the Indian Medical Service in 1884, spending his earlier years in Burma. In 1892 he became chemical examiner at Calcutta and was next appointed secretary to the Director-General of the Indian Medical Service. In 1904 Colonel Leslie was selected for the Sanitary Commissionership with the Government of India, a post of constantly growing labour and importance, to whose calls he assiduously responded. The country has lost in him an officer of experience and capacity both as administrator and specialist.

April 24th.

Obituary.

JOHN TATHAM THOMPSON, M.B., C.M. EDIN.,

CONSULTING OPHTHALMIC SURGEON TO THE CARDIFF INFIRMARY.

WE record with regret the death of Dr. J. T. Thompson which took place at Cardiff on April 28th. Dr. Thompson who was 52 years of age, was the son of Mr. Silvanus Thompson of York, and a brother of Professor Silvanus P. Thompson. He received his preliminary education at Bootham School, York, and afterwards went to Edinburgh University, where he graduated M.B., C.M. in 1885. At Edinburgh he studied anatomy under Sir William Turner, and ophthalmic surgery under the late Professor Argyll Robertson, for whom he acted as assistant, and was ophthalmic surgeon at the Western Dispensary. In Wales, which part of the United Kingdom he selected as the field for the exercise of the department of surgery he had chosen, he was appointed ophthalmic surgeon at the Cardiff Infirmary, and surgeon-oculist to the South Wales Institute for the Blind at Cardiff, his skill as an operator gaining for him a wide reputation.

Dr. Tatham Thompson contributed many valuable records of cases to medical literature. Most are to be found in the Transactions of the Ophthalmological Society, and include cases of depressed fracture of the roof of the orbit, cystic retina, tuberculosis of the eyeball, foreign bodies in the globe, hereditary optic atrophy, &c.; his case of unilateral facial hypertrophy with hypertrophic ptosis has features which make it not improbable that the patient was also suffering from plexiform neuroma. In 1889 he gave one of the earliest and most exhaustive reports on a family with hereditary tendency to cataract in early childhood. He devised a modification of the usual operation for anterior staphyloma. Perhaps his most valuable contribution was on miners' nystagmus, in which he emphasised the importance of defective illumination as a factor, regarded by him as of more importance than the attitude of the worker, which was held by Snell and others best to explain the genesis of the disease. He was the author of a brochure on "The Influence of Early School Life on Eyesight." In Vol. II. of THE LANCET, 1891, p. 926, will be found a case of Successful Removal of a Fragment of Steel from the Retina by means of the Electro-magnet, in which Dr. Thompson says: "So far as can be ascertained, the only cases previously recorded of successful removal from the retina are those of Galezowski and Hirschberg." It is true that other cases of removal from the retina had been recorded, but not with retention of vision, as in Thompson's case, and in a letter in the same volume of THE LANCET (p. 1173) this fact was pointed out.

Dr. Thompson, who was a major in the Royal Army Medical Corps, Territorial Force, devoted many of his leisure hours to sketching, some drawings illustrating the humours of a rectorial election being well known to his many friends and admirers. He was a member of the British Medical Association and of the Ophthalmological Society, a Fellow of the Royal Microscopical Society, and a keen and prominent Freemason.

Dr. Tatham Thompson leaves a widow, one son, and three daughters.

The first part of the funeral service took place at Cardiff on Monday, May 1st, and was of a military character. The coffin was borne to the church by non-commissioned officers of the Royal Army Medical Corps (T.F.), and following the service a procession was formed from the church to the Great Western station headed by the band of the corps, followed by the coffin on a gun-carriage, the military, Freemasons, representatives of the Cardiff Infirmary, members of the Cardiff Medical Society, representatives of the Blind Institute, and others. At the station the coffin was entrained for Woking where the body was cremated.

The following testimonies record the high esteem in which Dr. Tatham Thompson was held by his colleagues and professional brethren and supplement our brief record.

Dr. D. R. Paterson writes:—"Medical students at Edinburgh in the early 'eighties' well remember Tatham Thompson. He entered with zest into the social life of the student of that time, and there was scarcely a sphere of activity open to students in which he was not found taking a part. When he entered the University he was slightly older than most of his contemporaries, and his strong personality rapidly carried him to the front and cast him for a leading part. Much interested in the student societies, he threw himself with especial energy into the political contest for the Lord Rectorship. He was a good speaker, being president of one of the party clubs, and whenever the fun was fast and furious there Thompson was in the midst of it. Possessed of great artistic ability, he made one rectorial election memorable by publishing a series of cartoons which the *Scotsman* of that time said were not unworthy of Tenniel himself. One of the most successful cartoons illustrated a story of the late Professor Blackie which went the round at that time. He had put up a notice on the class-room door that he regretted he could not meet his classes that day. A sharp student deleted the initial 'c' and waited to see how Blackie took it. Thompson admirably portrays the venerable professor in his turn erasing the letter 'l' and leaving the notice to read 'his asses.' Thompson's artistic gifts were in great demand when a student, and he did much illustrating for medical works. His social qualities were frequently in evidence at the kitchen concerts in the Royal Infirmary. He could sing a good song and he was an admirable reciter, which made him an ever-welcome guest at an entertainment. Though of slight physique, he was endowed with apparently tireless energy. He took part at the 'varsity in bicycle races, won prizes at Powderhall for walking, and was a keen tennis-player. In later life he was equally devoted to golf, and latterly, when the state of his health circumscribed his activity, he took to the game of bowls and excelled in it. What he did he put his whole energy into it. When he decided to take up eye work he worked with the late Dr. Argyll Robertson, to whom he acted as house surgeon. Both chief and house surgeon remained much attached to each other. The hands which so deftly wielded the pencil proved to be admirably suited to work on the eye. On settling down in South Wales Thompson's social qualities speedily secured him a host of friends, and he rapidly laid the foundation of a large practice. His knowledge of his own special work was profound, and his removal at a comparatively early age has occasioned deep regret."

Mr. William Sheen writes:—"I remember Tatham Thompson best in two capacities, a colleague and worker at the Cardiff Infirmary, and a keen enthusiastic volunteer medical officer. In his early infirmary days he ran single-handed a large ophthalmic department, never sparing himself on the hot wearisome summer days surrounded by astigmatic babies—most trying to the temper and the nerves. In the wards he was charming with the old women with cataract—many a one related afterwards how he had 'taken out her eye and washed it'—his humorous way of describing the disinfecting of a cocainised eye. In later years, as chairman of the medical board of the infirmary, he never spared himself in the interests of the institution. As a volunteer officer he worked hard, thoroughly taught the men under him, and was a most genial and popular comrade. His interest went beyond military medical matters. He was a constant attendant at war games and meetings of the local Tactical Society and a great friend and admirer of Colonel Lonsdale Hale. At his death he held the rank of major in the Territorial Royal Army Medical Corps, and it was with great pleasure he received during his last illness the Territorial Long Service Decoration.'

Mr. Charles Downing writes:—"Dr. Tatham Thompson was a prominent Freemason in Cardiff. He was initiated in the Glamorgan Lodge, of which he was a member for many years, before he became one of the founders of the Prince Llewellyn Lodge. In five years he became its Master, and he remained a Past-Master until his death, taking an active interest in the affairs of his lodge. He also passed through the chair of the St. John's Chapter at Cardiff, and it was his desire to go through all the offices of the Rose-Croix Chapter, but unfortunately death prevented. He was always a popular and genial 'Brother,' and will be greatly missed by the members of the craft.

WILLIAM BURNS BEATSON, M.D. ST. AND., F.R.C.P. LOND., F.R.C.S. ENG.,

SURGEON-GENERAL, INDIAN ARMY (RETIRED).

THE death occurred at Eastbourne on April 26th of Surgeon-General William Burns Beatson, late Deputy Surgeon-General of the Lahore Division, Indian Army. Studying at Guy's he became M.R.C.S. in 1846, and took the M.D. degree at St. Andrews six years later. In 1867 he took the F.R.C.S Eng. diploma after examination, and subsequently went to India. He retired from the Indian army in December, 1883, and returning to England settled at Bath, where he resided some years. In 1884 he took the M.R.C.P. Lond. diploma, and was elected a Fellow in 1901. He was the author of "The Indian Medical Service: Past and Present," and also various papers on surgical and medical subjects. Owing to his great age—86—the last few years of his life had been spent in retirement at Eastbourne, where he was buried on May 1st in Ocklynge cemetery. He was a warm supporter of philanthropic institutions.

CLAUDE CLARKE CLAREMONT, M.D., B.S. LOND., M.R.C.S. ENG.,

PHYSICIAN, ROYAL PORTSMOUTH HOSPITAL.

A PHYSICIAN of scientific attainments and of high moral worth has been lost to Portsmouth and to the profession by the death of Dr. C. C. Claremont. He was seized on April 10th, when visiting a patient, with aphasia and partial hemiplegia, due probably to embolism. At one time it was hoped that he was in a fair way to recovery, but he gradually sank and died on April 30th, at the age of 56. The son of a well-known London medical practitioner, he was educated at University College, and after qualifying in 1877 he held the offices of house surgeon at the Sheffield Hospital, house physician at the Seamen's Hospital, Greenwich, and assistant medical officer at the Charing Cross Hospital. In 1880 he was appointed house surgeon at the Royal Portsmouth Hospital, and since then the whole of his active professional life was associated with that institution, at which he held the post of honorary physician for the last 11 years.

A colleague of Dr. Claremont sends us the following appreciation of him:—"Most painstaking and conscientious, his highest aim was for the welfare of his patients, and he spared no pains in order that this might be secured. Solid and thorough in all that he did, he

> 'had an eye
> That winced at false work and loved the true.'

He wrote but little. His contributions to medical societies were sound and practical. Pathology especially claimed his attention. To strangers he was shy and reserved, but those who got to know him soon discovered that he was a man of much ability and able to talk well on any subject in which he was interested. He had the courage of his opinions and liked to get his own way, having a firm belief in his own judgment. He possessed the confidence of his medical *confrères* and his success as a consultant in the town and neighbourhood was steadily increasing. Dr. Claremont was physician to the South Hants Eye Infirmary, to the Gordon boys, and to the maternity charity. By none was he more highly valued than by the Sisters of St. Andrew's Home who are in charge of the Home of Comfort, Southsea, in which he took a deep interest and which he was always ready to help. His interests were not limited to his profession. He was a past president of the Portsmouth Literary and Scientific Society, and the meetings over which he presided owed much to his skilful guidance. Without a trace of self-assertion, he was well able to hold his own in debate. Dr. Claremont has left the record of a conspicuously useful life and a name which will long be held in affectionate remembrance by many whose lives he did much to brighten and by those who were privileged to count themselves among his friends. His faith was plain and simple and his life was a witness for Christian truth. His sun has gone down 'while it was yet day.'"

ROBERT ELLIOTT, M.A. T.C.D., L.R.C.S. IREL.

THE Rev. Robert Elliott, who died on April 25th, was the secretary of the medical committee of the Church Missionary Society, being in charge of the medical missions of that society. In 1878 he went abroad as a missionary of the Church Missionary Society and was appointed to the

Santal Mission in Bengal. He was a graduate in arts of Trinity College, Dublin, and had studied medicine for some time before going abroad, but had not obtained his qualification, and in those early days of medical mission effort, whilst it was considered important that the medical missionary should take holy orders the necessity of medical qualification was not fully recognised. It may here be said that, from later experience, Mr. Elliott was most profoundly convinced of the necessity of medical missionaries having the very best qualifications and the greatest practical experience before going abroad to posts of responsibility, and he also felt that it was better under ordinary circumstances that a medical missionary should not take holy orders owing to the difficulty of one man performing adequately the full duties of a clergyman in addition to the charge of a medical mission hospital.

After a short period of four years in Bengal Mr. Elliott returned home invalided in 1882, and for a time retired from the society's ranks. During his time at home, however, he obtained the qualification of L.R.C.S. Irel. in the year 1885, and in 1886 he again offered his services to the Church Missionary Society and was sent out to Gaza in Palestine, and it is interesting to note in this connexion that a contribution to his medical work in Gaza formed the nucleus of the Medical Missionary Auxiliary Fund which was started in that year and which amounted to £38,600 during the past year. At Gaza he developed the medical work which had been going on and was the means of founding a hospital, so that he laid the foundations of the splendid enterprise now being carried on by his successor, the Rev. Canon R. Sterling, M.B. Unfortunately after six years' service Mr. Elliott was again invalided home, and had not returned to the mission field except for a short visit which he paid to Palestine recently. On his return to Ireland he engaged in clerical work, but in the year 1900 he joined the headquarters staff of the Church Missionary Society as assistant secretary of the medical committee, when he assisted Dr. Herbert Lankester in the organisation of the medical missions of the society, particularly by advocating the claims of medical missions in different parts of the country, and many medical men will remember his earnest advocacy of this cause. At the end of 1903 Mr. Elliott became secretary of the medical committee with special charge of the administration of the medical missions of the society. His duties were to watch over the interests of the medical missionaries in the field in both the supply of instruments and drugs and in arrangements for hospital buildings, and to watch over the interests of the society in all matters concerning medical missions abroad. He rendered very good service to the missionary cause, and at the same time was a man with keen interest in his profession, and his medical and other colleagues feel that they have lost a very able and faithful fellow-helper for whom they had a most affectionate regard.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. James Bell, professor of surgery in the McGill University, Montreal.—Dr. Henry Cradle, formerly professor of ophthalmology and otology in the Northwestern University Medical School, Chicago.—Dr. Wilhelm Manz, formerly professor of ophthalmology in Freiburg, which was his birth-place. He studied there and in Vienna, and became a member of the professorial staff in 1863, retiring as emeritus professor in 1901. His published papers deal with various ophthalmological topics, especially with the questions of the development and malformation of the eye in the human subject. His age was 78.—Dr. Nägeli-Akerblom, *privat-docent* of the history of medicine in the University of Geneva.—Dr. Charles A. Oliver, formerly adjunct professor in the Women's Medical College of Pennsylvania in Philadelphia.

Mr. Godfrey Lowe, M.R.C.S. Eng., L.R.C.P. Lond., has been elected a member of the Lincoln city council at a bye-election held on account of the retirement of one of the working-men representatives. He is the sole representative of the medical profession on the council.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Angers*: Dr. Allanic has been appointed Professor of Chemistry and Toxicology in succession to Dr. Tesson.—*Budapest*: A University Clinic for Throat and Nasal Diseases is to be located in the building formerly used for a medical clinic. This is to be opened in September and will be under the direction of Professor Adolf Onodi.—*Erlangen*: Dr. A. Scheibe of Munich has been appointed Extraordinary Professor of Otology and Laryngology.—*Naples*: Dr. Pietro Stancanelli has been recognised as *privat-docent* of Dermatology.—*Prague (German University)*: Dr. Anton Garkisch has been recognised as *privat-docent* of Midwifery and Gynæcology, and Dr. Jose Verocay as *privat-docent* of Pathological Anatomy.—*Rome*: Dr. Amelio Zancia has been recognised as *privat-docent* of Otology and Laryngology.

QUEEN'S UNIVERSITY: FACULTY OF MEDICINE.—The following is the class prize-list for the winter session, 1910-11. Experimental Physics: 1, R. Weaver and T. K. Wheeler—equal; 2, R. G. M'Elney. Chemistry (Theoretical): 1, S. J. Hutchinson; 2, T. W. Elliott; 3, J. Boyd; 4, J. Smyth; 5, T. K. Wheeler; 6, E. G. B. Calvert; 7, G. L. Hill. Chemistry (Practical): 1, J. C. M'Cutcheon; 2, Mary E. Henry; 3, Elizabeth S. Walker; 4, W. L. Agnew. Chemical Laboratory: 1, Nora M'Ervel; 2, L. Phillips. Anatomy (Elementary): 1, T. K. Wheeler; 2, E. S. B. Calvert; 3, Elizabeth S. Walker and James Boyd—equal. Anatomy: 1, Owen Wilson; 2, James Tate; 3, E. B. C. Mayrs; 4, H. L. Greer and G. R. B. Purce—equal; 5, A. Fullerton and J. F. D. Hunter—equal. Practical Anatomy (first year): 1, T. K. Wheeler; 2, Miss M. E. Walker; 3, E. G. B. Calvert; 4, T. Milling and A. Porter—equal. Practical Anatomy (second year): 1, James Tate; 2, W. S. B. Hay; 3, Beattie Lyons and G. W. Rea—equal; 4, N. Beattie; 5, O. Wilson; 6, R. H. Wilson. Practical Anatomy (Senior): 1, E. C. T. Emerson. Physiology: 1, E. B. Mayrs; 2, Owen Wilson; 3, G. R. B. Purce and Hardy Greer—equal; 4, A. Fullerton; 5, W. J. Lascelles. Practical Physiology and Bio-Chemistry: 1, W. M'K. H. M'Cullagh and E. B. Mayrs—equal; 2, Owen Wilson; 3, R. N. M'Kinstry; 4, M. G. Paul, Margaret Gorman, and W. S. B. Hay—equal. Histology Demonstrations: 1, B. Lyons; 2, J. F. D. Hunter; 3, Elizabeth M. Robb. Special Prizes in Histological Demonstrations: 1, Margaret Gorman; 2, D. Gaston; 3, A. Fullerton. Materia Medica: 1, W. A. L. Dunlop and Thomas Walker—equal; 2, Gerald Hogg. Pathology: 1, T. Walker and W. A. L. Dunlop—equal; 2, S. Geddis and Edith Robinson—equal; 3, G. Hogg. Hygiene: 1, J. Beverland; 2, W. A. L. Dunlop and T. Walker—equal; 3, R. Marshall. Medicine: 1, Hugh H. M'H. Wallace. Midwifery: 1, James Lyons; 2, Hugh W. M'H. Wallace. Surgery: 1, James Lyons; 2, Mary W. Doran; 3, Hugh W. M'H. Wallace: Ophthalmology: 1, J. Lyons.

THE CHEMISTS' EXHIBITION.—The Seventeenth Chemists' Exhibition was held at the Holland Park Skating Rink, Holland Park Avenue, London, W., during the week just past. The organising committee, doubtless for good reasons, arranged a change of venue, as hitherto the exhibitions have been held always in the Royal Horticultural Society's Hall at Vincent-square, Westminster. The Holland Park Skating Rink provided much more space for the exhibits, and on the whole advantage was taken of this fact by the exhibitors. Some of the stalls were quite palatial in size and many of them made an imposing exhibit. Although primarily intended to promote good business relations betwixt the wholesale and retail trade and to bring forward "new lines" and recent pharmaceutical developments, the exhibits presented several points of interest to the medical man. There was a most instructive display of drugs and special pharmaceutical preparations, and there were also several interesting inventions exhibited of apparatus more or less bearing upon public health questions. This annual exhibition has now become a recognised event in the affairs of chemists and druggists, and the fact that it continues and grows in magnitude shows that it is widely appreciated.

THE King has been pleased to nominate Sir Francis Henry Champneys to be, for the term of five years from May 23rd, 1911, a member of the General Council of Medical Education and Registration of the United Kingdom.

A LECTURE will be delivered under the auspices of the Incorporated Institute of Hygiene on Food Adulteration and Food Substitutes, their Effect on Health, by Professor W. D. Halliburton, at 34, Devonshire-street, London, W., on Tuesday, May 16th, at 5 P.M.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. J. E. Renshaw the Bury Infirmary will receive £1000. The testator also left £500 for a seaside convalescent home for the use of poor children of Bury.—The following bequests have been made under the will of the late Mr. George Harding of Liverpool: £1000 each to the Royal Infirmary, Liverpool, the Royal Southern Hospital, and the David Lewis Northern Hospital, Liverpool; £500 to the Stanley Hospital, Liverpool; and £100 to the Liverpool Hospital for Women.—The late Mr. John Spencer has bequeathed £5000 to the University of Birmingham, to be applied in the advancement of science and in promoting the working-out of scientific problems in any department of science and in such way as the Principal and Vice-Principal shall determine. Subject to other legacies and bequests, the testator left the residue of his estate to the University of Birmingham for like purposes.—The Worshipful Company of Merchant Taylors has sent a donation of 10 guineas to the funds of the After-Care Association for Poor Persons Discharged Recovered from Asylums for the Insane, Church House, Dean's Yard, Westminster.

MEDICAL WORK AND FOREIGN MISSIONS.—The growing importance of medical work in connexion with foreign missions was well shown at the annual meeting of the Medical Mission Auxiliary of the Church Missionary Society, held on May 5th in the Queen's Hall, Langham-place, W. Sir Alfred Pearce Gould, K.C.V.O., presided over a large and enthusiastic gathering, and the speakers included Mr. A. E. Druitt, of Onitsha, West Africa; Mr. A. Neve, of Kashmir; and Nurse Baldwin of Foochow. The report read by Dr. H. H. Lankester, lay secretary of the society, showed that a sum of £42,620 had been raised and expended on medical missions during the past year, and that the society had now a staff of 88 medical men and women and 54 fully-trained nurses, besides their large staff of native doctors, hospital assistants, and nurses. The society maintains 50 hospitals in various parts of the world, and a notable feature of the year's progress has been the consolidation of work by rebuilding, enlarging, and more fully equipping several of these. The work of medical missionaries has been officially recognised by the bestowal of the Kaisar-i-Hind gold medal upon Dr. T. L. Pennell, of Bannu, and the silver medal of the same Order upon Dr. H. T. Holland, of Quetta. Referring to the influence of medical missions in maintaining friendly relations with the tribes of the North-West Frontier of India, Mr. Neve quoted the dictum of a highly placed Indian official to the effect that Dr. Pennell was worth two regiments of soldiers to the Indian Government.

ROYAL PHOTOGRAPHIC SOCIETY'S EXHIBITION.—Radiography again bulks largely in the scientific section of the Royal Photographic Society's Exhibition, which was opened at the Prince's Skating Club, Knightsbridge, on May 9th. Mr. C. Thurstan Holland of Liverpool obtains a medal for two radiographs, one showing bismuth food in a prolonged transverse colon, and the other the bismuth meal in a stomach with hour-glass constriction. The same worker is responsible for several radiographs showing stones in the kidney, and for one example of the result of injecting collargol solution into a cystic kidney. Each cyst and the ureter are shown filled with the solution, which is opaque to the X rays. There are several examples of what may be called snapshot radiography. A radiograph revealing tuberculous disease of the lung, exhibited by Dr. Robert Knox, had an exposure of 100th of a second with the new Dessauer apparatus, and a similar exposure was given in the case of a bismuth meal in a dilated œsophagus. Dr. G. H. Rodman contributes a series of three radiographs which illustrate the advantage of using an intensifying screen in contact with the emulsion of the plate at the time of exposure. Two radiographs by Dr. G. T. Haenisch of Hamburg should also be noted. One of these shows how an early diagnosis was made of a cancer in the colon subsequently proved by operation. A radiograph of the head of a child of 12 years, showing the formation of the second teeth, was placed on exhibition by Mr. William Jolly and Mr. J. Inderwick Pigg.

UNIVERSITY OF OXFORD.—The degree of D.M. has been conferred upon Mr. F. J. Sadler.

THE Dreadnought Seamen's Hospital has received a gift of £1000 for the purpose of endowing a bed, from a benefactor who wishes to remain anonymous.

METROPOLITAN POLICE SURGEONS' ASSOCIATION.—A general meeting of this association was held in the Council Room of the British Medical Association, 429, Strand, W.C, on May 4th. Dr. Fred. J. Smith gave a most interesting demonstration on Poisons and their Post-mortem Appearances, and also opened a discussion on Police Surgeons' Difficulties and the Way Out of Them. Sixty members were present and many took part in the proceedings and some very interesting experiences of police surgeons' work were related.

BRITISH MEDICAL ASSOCIATION, METROPOLITAN COUNTIES BRANCH (MARYLEBONE DIVISION).—At the annual meeting of the division, at the rooms of the Medical Society of London, 11, Chandos-street, W., on Monday, May 29th, at 5.30 o'clock, after the transaction of formal business, a discussion will be opened on "The Insurance Bill" by the Right Honourable Sir Thomas Palmer Whittaker, M.P. Intending speakers are asked to send in their names early to Mr. N. Bishop Harman, honorary secretary of the division, 108, Harley-street, W. All practitioners resident in Marylebone are invited to attend.

ST. MARY'S HOSPITAL APPEAL.—Mr. Alfred de Rothschild, the treasurer of St. Mary's Hospital, has, with the approval of the President of the hospital, His Royal Highness Prince Arthur of Connaught, issued an appeal for £7500 in order that the casualty and receiving rooms department of the hospital may be remodelled. At present this department is enormously overcrowded and the suggested improvements will not only affect the reputation of the hospital, but also the comfort and well-being of thousands of patients. No structural alterations have been made in the casualty department of the hospital since 1851, yet the number of cases treated annually has risen from 4000 to 25,000.

COLONIAL MEDICAL SERVICES.—*West African Medical Staff:* Mr. W. N. Alexander, medical officer, Sierra Leone, has retired with a gratuity. The following have been selected for appointment to the staff: Mr. G. G. Butler (Sierra Leone), Dr. A. Connal (Gold Coast), Mr. M. B. Hay (Gold Coast), Dr. A. Ingram (Gold Coast), and Dr. A. F. Kennedy (Gambia).—*Other Colonies and Protectorates:* Dr. E. B. Bate has been selected for appointment as Public Physician at Inagua, Bahama Islands; Dr. R. Hamilton has been selected for appointment as a Medical Officer in the East Africa Protectorate; Dr. J. A. Mackintosh has been appointed an Assistant Surgeon in Nassau, Bahama Islands; and Dr. J. C. A. Ridgway has been selected for appointment as a Medical Officer in Uganda.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

National Insurance against Invalidity.

THE Bill "to provide for insurance against loss of health and for the prevention and cure of sickness and for insurance against unemployment" which the CHANCELLOR of the EXCHEQUER introduced in the House of Commons on May 4th is one of the most ambitious and far-reaching measures of social reconstruction which a Minister has for several generations presented to Parliament. The sickness and invalidity portion of the Bill, it is estimated, will affect nearly 15,000,000 people. It proposes a scheme of medical relief of great magnitude, introduces maternity allowances, subsidises the building of sanatoriums, and gives various benefits to persons of limited means when they are overtaken by sickness. A scheme of insurance against unemployment is formulated for

trades where depression is most frequent. It is estimated that in the first year of its operation the Bill will involve the raising of £24,500,000. This sum will be found for the most part by contributions from employers and workpeople, but a proportion will be contributed by the State. This proportion in the first year will amount to about £2,500,000, but the CHANCELLOR of the EXCHEQUER calculates that in the immediately succeeding years there will be a very large increase in the State's contribution. Mr. LLOYD GEORGE spoke for nearly two and a half hours in explaining the intricate details of his Bill. The reception given to it in all quarters of the House was friendly, but it was evident that a close and careful scrutiny awaits the finance of the measure.

The sickness insurance part of the Bill is divided into two parts: (1) compulsory, and (2) voluntary. The compulsory part of the Bill involves a compulsory deduction from the wages of all the employed classes who earn weekly wages, or whose earnings are under the income tax limit (£160 per annum). Certain classes of persons, including soldiers, sailors, teachers, and certain categories of casual labourers, are excluded, but special provision will afterwards be made for some of these. The scale of contributions is: Workmen 4*d.* per week, work-women 3*d.* per week, employer 3*d.* per week, and the State 2*d.* per week per person. In the case of workpeople earning under 15*s.* per week the contribution will be lower but that of the employer higher. Persons of more than 65 years of age will not come within the scheme; and those over 50 will receive reduced benefits. The voluntary scheme applies to small tradesmen and persons who have no employer. They frequently at present belong to friendly societies. It is proposed as a general rule that the contribution under the voluntary scheme will be 7*d.* per week for men and 6*d.* per week for women. According to the official calculations 9,200,000 men and 3,900,000 women will be embraced in the compulsory scheme, 600,000 men and 200,000 women in the voluntary scheme, and 500,000 boys and 300,000 girls under 16—total, 14,700,000.

The benefits under the scheme in return for these contributions will be: (1) medical relief; (2) medical attention in cases of maternity; (3) State assistance in the provision of sanatoriums; (4) sick allowance of 10*s.* per week for men and 7*s.* 6*d.* per week for women for the first three months of illness, and afterwards 5*s.* per week for both; and (5) disablement allowance of 5*s.* per week. Young persons under 16 are only to be entitled to receive medical attendance.

The collection of the funds will be made by means of cards kept by the wage earners, the amount of the contributions being indicated by stamps. The distribution of the benefits will be made through approved friendly societies with local committees. For the class of persons who remain outside the friendly societies machinery has been devised whereby they are dealt with under the Post Office. It is anticipated that for the most part they will be what in insurance phraseology are known as "bad lives." They will be credited with their own contributions and those of their employers and the State, but after a deduction has been made for medical relief and for sanatoriums the balance in this case will be distributed on purely deposit principles. These persons will be placed under the "County Health Committees." The administration of the sanatoriums will also be placed under the charge of these organisations.

These are the outlines of the proposals of the CHANCELLOR of the EXCHEQUER'S scheme for national insurance against sickness and invalidity, but there are portions of his speech of particular interest to the medical profession, of which a much more extended summary should be given.

Mr. LLOYD GEORGE, in the course of his speech, said that the benefits under the Bill would be distributed under two or three different heads. There would be medical relief. There would be the curing side of the benefit, and there would be the allowance for a man and his family during the time of his sickness. He would deal first of all with the medical side of relief. There was no doubt that there was great reluctance on the part of the workman to resort to the Poor-law medical officer. What generally happened was that when a workman fell ill he had no provision made for him; he hung on as long as he could. Then he went to a medical man and ran up a bill. When he recovered he did his very best to pay it and other bills, but he very often failed to do so. He (Mr. LLOYD GEORGE) had met many medical men who had told him that they had hundreds of pounds of this kind of bad debts of which they could not think of pressing for payment. What really happened now was that hundreds of thousands—he might be right in saying millions—of men, women, and children of the services of good-natured medical men. He did not think that this charity should be done at the expense of the medical profession. What the Government proposed to do was this. If one of the 14,700,000 persons who practically included all the industrial population of the country fell ill he could command the services of a competent medical man with the knowledge that he could pay and that the medical man would be paid. That was going to make a very great difference in the doctoring of these people. He came now to rather a delicate task, because the medical men and the friendly societies were at variance on the subject. The medical men said that they were underpaid. On the other hand, the friendly societies said, "No, it is just your greed." That was the quarrel which was going on at the present time, and it had become very acute. In some districts—they were rural districts—the medical man was paid half-a-crown per head per annum for members of friendly societies. In other districts the amount ran up to 6*s.* per head per annum, but on the average doctoring for members of friendly societies was done at 4*s.* per head per annum. The medical men said "We cannot do it," and he was inclined to agree with them. This was not the opinion of the friendly societies that he was putting before the House. He had information from independent inquiries which he had made of men who had really no interest in the matter—men who had passed through the stage of doing friendly societies' work and who were very good judges. They said that no medical man could possibly afford to give expensive drugs, and some of these were essential to the cure of certain diseases. These drugs could not be purchased at the price paid to the medical man if he was to get anything for his professional services. He was on the whole inclined to agree that the medical men had got a case for increased payment, not so much as they asked, something far short of that, but at the same time something very substantial. The first thing which he thought should be done was to separate the drugs from the doctors, because a patient, so long as he got something discoloured and really nasty was perfectly convinced that it must be very good medicine. Therefore, there ought to be no inducement for underpaid medical men "to take it out" in drugs. He therefore suggested that there should be a separation of drugs from the doctor whose business should be confined to prescribing. It should be for the chemist to dispense. At any rate, there should be a compulsory separation of the two. That, he believed, was the practice in Scotland at the present moment. Therefore, the Government proposed to make provision that if there was no chemist available the medical man ought to be allowed to go on as at the present moment, but wherever there was a chemist available there should be separation. In addition to that, he thought there ought to be provision for an improvement in the standard of payment to the medical men. Sometimes, no doubt, they were quite adequately paid, but sometimes they certainly were not, and he thought financial provision ought to be made in the scheme for raising the level to 4*s.* He had done so, and he hoped that that would meet the views of the House. So much for doctoring. There would be free doctoring for everybody who was a contributor to the scheme. The second branch of medical attention would be in cases of maternity. There were only one or two friendly societies which at the present moment allowed any maternity benefit. Undoubtedly there was no more urgent need. Women of the working classes in critical cases were neglected sadly, sometimes through carelessness, but oftener through poverty, and that was an injury not only to the woman herself but to the children who were born. The Government proposed to take the basis of the maternity benefit of the Hearts of Oak Society. They proposed that there should be a 30*s.* benefit scheme in those cases, which would cover the medical attention and the nursing, but only conditional upon those who were women workers not returning to work for four weeks after confinement. He was told that in mills cases very often occurred where women worked up to the last moment and the maternity was over in a comparatively few days. He believed that some provision ought to be introduced in the interests of humanity to prevent that from taking place. He had to refer to another branch of medical benefit. The Government proposed to do something to deal with the terrible scourge of consumption. He believed that in this country there were about four or five hundred thousand persons who were suffering from tubercular disease. From the point of view of the friendly societies that was a very serious item because of the dragging length of the illness. The average illness of these patients of the Foresters, he thought, was 58 weeks, and out of the total sick pay of the Foresters about 25 per cent. was due to tuberculosis. There were 75,000 deaths every year in Great Britain and Ireland from tuberculosis, and what was a much more serious matter, one out of three of the males between the ages of 14 and 55 died from tuberculosis. It was a very sinister fact that at the very period which was responsible for the continued life of the race one in three between those ages was stricken down by tuberculosis. Men who had devoted a great deal of attention to this matter were full of bright hopes that they could stamp the disease out. But they could only do it if they had the means, and he proposed to ask the House to give them. In Germany great things had been done in this respect. There a vast chain of sanatoriums had been erected all over the country and the results were amazing. The number of cures that were effected was very large. In this country there were practically only 2000 beds in sanatoriums for tubercular patients. There were only 4000 beds in sanatoriums altogether, and half of these were occupied by other patients. It was about time that the nation should take the matter in hand because the State had suffered. The proposal of the Government was that they should first of all assist local charities and local authorities to build sanatoriums throughout the country. They proposed to set aside £1,500,000 of a capital sum for the purpose of aiding local people in building sanatoriums throughout the country. The proposal of the Government was that they should take a contribution of 1*s.* per member per annum for the whole of those who were insured compulsorily and voluntarily, and that in addition to that the State should find 4*d.*, so that there should be

1s. 4d. per member for the purpose of raising a fund for the maintenance of these institutions. That was not an additional contribution. It was purely a benefit. This would mean a fund of a million a year for the purpose of maintaining these institutions, and he was assured by those who had taken the matter carefully into consideration, including the President of the Local Government Board and his very able staff, that that sum would enable the country to do something, at any rate, for the purpose of stamping out this terrible scourge. After referring to various details of his scheme, the right honourable gentleman went on to deal with the county health committees. There would be a membership between 9 and 18 on which the county council, the approved societies in the district, &c., would have representation. The county health committees, it was proposed, should administer the sanatorium funds. Instead of a sanatorium for each county it was proposed that there should be grouping for the purpose of sanatoriums The Government also put forward another proposition. If any approved society chose to come to terms with the county health committee to do its medical work for it, the Government proposed that there should be power to do this. If they agreed, the county health committees could take over the medical work of the approved societies if they chose to do so. It was purely a matter of arrangement on both sides. There would be a further power. If a county health committee were anxious to spend more money than they had funds at their disposal upon either the medical side or the sanatorium side, the county councils would have power to agree to sanction further expenditure provided the Treasury also agreed. One half of the additional expenditure would come out of the rates and the other half out of the Treasury. The committees would have power also to make provision for the giving of lectures and the publication of information on questions relating to health. In certain cases the committee would, when there was excessive sickness, have powers to apply to the Local Government Board for an inquiry into its causes. Whenever the Commissioners of the Local Government Board found that it was due to the neglect by the local authorities to discharge functions imposed by an Act of Parliament for the housing of the people or for improved sanitation they would have powers of imposing that excess, not on the societies which were not at fault, but upon the local authorities who were at fault. That would be a much more effective check than the old obsolete form of *mandamus*. The right honourable gentleman appealed to the House to consider sympathetically his schemes which were designed to alleviate an immense mass of human suffering.

Annual Report of the Local Government Board for Scotland.

The Report of the Local Government Board for Scotland for the year 1910 has been presented to Parliament, and is issued as a Blue-book. It deals with such matters as Poor-law nursing, vaccination, and public health. Amongst the many interesting points mentioned in the report is the fact that at Dec. 31st, 1910, 82 local authorities, representing a population of 2,281,388, or 51 per cent. of the total population of Scotland, had adopted compulsory notification of pulmonary phthisis.

Manual of the Army Medical Corps.

A new edition of the manual of instruction for the Army Medical Corps will, it is hoped by the War Office, be ready for press in a few weeks' time.

HOUSE OF LORDS.

THURSDAY, MAY 4TH.

The Lunacy Bill.

The LORD CHANCELLOR in moving the second reading of the Lunacy Bill explained that its object was to give statutory sanction to a scheme amalgamating the Masters in Lunacy, the Lord Chancellor's Visitors, and the Commissioners in Lunacy, with their respective offices, into one body. It was proposed to raise the number of paid commissioners from 11 to 13 by adding two medical men.

The motion was agreed to.

HOUSE OF COMMONS.

WEDNESDAY, MAY 3RD.

Certifying Lunatics in the Metropolis.

In answer to Mr. LANSBURY, Mr. BURNS (President of the Local Government Board) wrote that the total fees paid by metropolitan guardians under Section 285 of the Lunacy Act, 1890, during the year 1910 to medical practitioners for the examination of lunatics or alleged lunatics was £4124 13*s.* 2*d.* The Lunacy Act, 1890, gave authority to a justice to order the payment by the guardians of a fee to a medical practitioner called in to examine a lunatic or alleged lunatic. It was understood that in some cases arrangements had been made by which the examination of alleged lunatics was made by one of the Poor-law medical officers, who was paid a salary, inclusive of remuneration for examining lunatics, or a fixed sum in lieu of fees. This might account for the small amount paid in fees in certain cases.

THURSDAY, MAY 4TH.

Medical Referees.

Mr. GILL asked the Under Secretary of State for the Home Department whether he could state how many cases of injury were referred to the medical referees for examination and decision under the Workmen's Compensation Act in 1910; how many medical referees there were, and the total amount of fees paid to them in connexion with their offices during the same period, in the United Kingdom; whether the whole of them were also engaged in private practice; whether any, and, if so, how many, also acted for insurance companies and whether he could give the number of such referees in Lancashire, the number of cases referred to them, and the amount of fees paid to them during the same year.—Mr. MASTERMAN replied: The number of cases in which referees were employed was 1667, the number of referees 349, and the total amount of the fees paid to them £4177 1*s.* 6*d.* The corresponding figures for Lancashire were 319 cases, 29 referees, and the amount of fees £726 17*s.* None of the referees are whole time officers. It is one of the conditions of appointment of a referee that he shall not hold any regular employment by, or on behalf of, an insurance company in connexion with cases under the Act, and they are also instructed that, apart from quite exceptional circumstances, they should not act on behalf of the employer, or insurance company, or workman in any case in which weekly payments are being made to a workman under the Act.

Housing Conditions in the Swansea Valley.

Mr. JOHN WILLIAMS asked the President of the Local Government Board whether he had now received any communication from the Pontardawe public health authority concerning housing conditions in the Swansea Valley; and, if so, whether he was in a position to state what steps he proposed to take to move the said authority to immediate action. The honourable Member further asked the right honourable gentleman whether he would urge upon the Pontardawe district council the necessity and advisability of adopting a town-planning scheme, and of constructing any cottages proposed to be erected in such a manner as to fit in with the requirements of such a scheme, and whether he was aware that, according to the medical officer of health's report for 1910 for the Pontardawe district, there were 50 basements occupied in the district, and, according to his report for 1905, there were 28 houses condemned as being unfit for habitation, but that, notwithstanding the condemnation in the said report, those houses were still inhabited; that, according to the same report, there were then 19 young married couples waiting for houses; and that since that time the number had more than doubled; and whether he would undertake to see that the provisions proposed to be made by the said council were adequate to meet the pressing and urgent needs of the district at the present moment.—Mr. BURNS replied: I am aware from the report of the medical officer of health of the Pontardawe rural district for the year 1910 that there are about 50 basements in use for human habitation in Ystalyfera in the district. Having been in communication with the rural district council in regard to the housing conditions in their area I have been informed by them that they have practically agreed to acquire land in the portion of the district named sufficient for the erection of about 120 houses, and that at the present time they are considering plans for the erection of 50 houses. Until the provision of further houses is accomplished the council feel unable to deal effectively with some of the existing insanitary houses. I have impressed upon the council the necessity for prompt and energetic action on their part, and I shall not lose sight of the matter. I am not in a position to express an opinion upon the desirability of a town-planning scheme for the rural district, but I will bring the matter to the notice of the council, and will bear it in mind when dealing with any proposal from them for the erection of houses.

The Population of Scotland.

Answering a question put by Mr. EUGENE WASON, Mr. URE (the Lord Advocate) stated that according to the preliminary examination of the returns of the recent Census the population of Scotland in 1911 was 4,759,521, of whom 2,307,672 were males and 2,451,849 were females. In 1901 the population was 4,472,103, of whom 2,173,755 were males and 2,298,348 were females. The actual increase in the ten years was 287,418.

Medical Inspection of School Children.

Mr. FRANCIS MEEHAN asked the President of the Board of Education whether he would state the amount paid annually by the Government to medical officers in England for inspection of children in schools, and the rates of allowances for the same; and whether the Local Government Board in Ireland were making arrangements to put the same order in force.—Mr. RUNCIMAN replied by written answer: Medical officers for the inspection of children in public elementary schools in England and Wales are not paid by the Government but by the local education authorities who appoint them. Some of these officers are employed in the work of inspecting school children for the whole of their time, and others for part of their time only. There is no uniform rate of payment, and I am afraid I cannot furnish a satisfactory estimate of the total expenditure. Some information as to the school medical service as at present organised in England and Wales will be found in Section 1 of the report of the chief medical officer of the Board issued in November last. I am unable to furnish a reply to the second part of the question which should, presumably, be addressed to the Irish Office.

MONDAY, MAY 8TH.

Post Office Sorters and Nervous Diseases.

In answer to Mr. DAWES, Mr. H. SAMUEL (the Postmaster-General) said: The number of deaths as the result of diseases of the mental and nervous systems amongst sorters in the London postal service during the five years was as follows:—

	Total number of sorters.	Number of deaths.
1903	5562	3
1907	5612	*Nil.*
1908	5765	4
1909	5831	3
1910	6092	*Nil.*

There are no figures available at my office of the number of officers who have received medical treatment for neurasthenia and kindred complaints, and to collect them from the several districts would involve an expense which would not, in my opinion, be justified, but I will, if the honourable Member so desires, furnish him with particulars of the superannuations from these causes during the period in question.

Certifying Surgeon for Bridgeton, Glasgow.

Mr. CHURCHILL (the Home Secretary), in reply to Mr. WATT, said: Dr. Alexander Scott has been appointed certifying surgeon for the Bridgeton district of Glasgow by promotion from the corresponding

appointment in the Central District which he previously held and which is now vacant. He has had wide experience of industrial accidents and diseases, and has rendered service of exceptional value for many years both as certifying surgeon and by his voluntary efforts to combat the dangers of industrial employment.

Small-pox in Madras.

Mr. PICKERSGILL asked the Under Secretary of State for India whether he was aware that an epidemic of small-pox was now raging in Madras, the deaths from the beginning of the year having been (according to the Registrar-General's returns), in January, 40; in February, 50; and to March 18th, 82, representing a fatality-rate of 360 per 1,000,000 population; whether he was aware that the official returns of the city showed that during the past few years the annual average number of public vaccinations per 1000 of population had been more than three times greater than the number officially recorded as carried out in London; and whether he would ascertain what steps were being taken by the authorities in Madras to cope with the epidemic apart from vaccination.—Mr. MONTAGU wrote in reply: The Secretary of State regrets that the city of Madras is suffering from an epidemic of small-pox. He understands that the corporation has opened isolation hospitals, and that a special staff is employed under the health officer to carry out measures of disinfection and to bring cases to light. Owing to the form in which the Madras vaccination returns are kept exact comparison with those of London is not possible. As an example, I would remind my honourable friend that re-vaccinations are not included in the London statistics.

TUESDAY, MAY 9TH.

Sanitary Accommodation at Railway Stations.

Mr. CATHCART WASON asked the President of the Board of Trade whether, in view of the fact that sanitary accommodation must be provided at all new railway stations, he would take steps to ascertain how far this regulation was complied with.—Mr. BUXTON replied: It is the usual practice of the Board of Trade to require the provision of sanitary accommodation at new stations on ordinary railways. Such stations are inspected by officers of the department, and it is ascertained on inspection that the requirement in question has been carried out. In the case of light railways and of stations on tube railways situated near public sanitary accommodation the provision of such accommodation at the stations is not required.

The Plague in India.

Mr. MORRELL asked the Under Secretary of State for India whether he would state the number of deaths due to plague that had occurred in the United Provinces in each year since 1902, with the percentage to the population in each case, the annual number of inoculations against plague, and the annual expenditure on measures for the relief of plague.—Mr. MONTAGU furnished the following tabular statement in reply:—

Year.	Plague deaths.	Percentage of the population.	Number of inoculations.	Expenditure.*
				£
1903 ...	84,499	0·177	964	13,117
1904 ...	179,082	0·375	3,258	5,283
1905 ...	383,802	0·805	6,411	7,787
1906 ...	69,660	0·146	1,846	5,245
1907 ...	328,862	0·690	34,169	22,533
1908 ...	22,878	0·048	133,666	32,163
1909 ...	38,394	0·080	97,899	8,216
1910 ...	158,057	0·335	71,033	7,000 (approximate).

* Includes expenditure from general revenues, but does not include expenditure incurred by local and municipal bodies from local and municipal funds. The figures given in this column are for the financial year ending March 31st of the year following that to which the corresponding figures in the other columns relate.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London.

A Manual of Pathology and Morbid Anatomy. By T. Henry Green, M.D., F.R.C.P. Eleventh edition, revised and enlarged, by W. Cecil Bosanquet, M.A., M.D. Oxon., F.R.C.P. Lond. Price 15*s.* net.

GREEN, WILLIAM, AND SONS, Edinburgh and London.

A Clinical Atlas of Sectional and Topographical Anatomy. By Richard J. A. Berry, M.D. Edin., M.D. Melb., F.R.C.S. Edin., F.R.S. Edin., Professor of Anatomy in the University of Melbourne. Price 42*s.* net.

Carbonic-Acid Snow as a Therapeutic Agent in the Treatment of Diseases of the Skin. By R. Cranston Low, M.B., F.R.C.P. Price 5*s.* net.

HODGETTS, LIMITED, 36-38, Whitefriars, London, E.C.

The Public Health Service Directory and Year Book. 1911. Compiled by the Editor of *The Medical Officer*. Price 7*s.* 6*d.* net.

KIMPTON, HENRY, London. STENHOUSE, ALEXANDER, Glasgow.

Recent Advances in Hæmatology. Being the Dr. James Watson Lectures for 1910. By Walter K. Hunter, M.D., D.Sc. Price not stated.

Modern Treatment. The Management of Disease with Medicinal and Non-medicinal Remedies. In Contributions by American and Foreign Authorities. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica, Jefferson Medical College, Philadelphia; assisted by H. R. M. Landis, M.D., Director of the Clinical Department of the Phipps Institute (University of Pennsylvania). In Two Volumes. Price £3 net.

Diseases of the Nose, Throat, and Ear. Medical and Surgical. By William Lincoln Ballenger, M.D., Professor of Otology, Rhinology, and Laryngology, College of Physicians and Surgeons, Department of Medicine, University of Illinois, Chicago. Third edition, revised and enlarged. Price 28*s.* net.

LANTZA, A., Printer, Corfu, Greece.

Cholera. By Dr. S. C. Zavitzianos. Price not stated. (Printed in Modern Greek.)

LONGMANS AND CO., London; B. QUARITCH, London; DULAU AND CO., Limited, London; and BRITISH MUSEUM (NATURAL HISTORY), Cromwell-road, London, S.W.

A Handbook of the Tsetse-Flies (Genus Glossina). By Ernest Edward Austen, Assistant in the Department of Zoology, British Museum (Natural History). With Ten Coloured Plates and Illustrations in the Text, by A. J. Engel Terzi. Printed by Order of the Trustees of the British Museum. Price 5*s.* 6*d.*

PITMAN, SIR ISAAC, AND SONS, LIMITED, 1, Amen-corner, London, E.C.

Science and the Criminal. By C. Ainsworth Mitchell. Price 6*s.* net.

REBMAN, LIMITED, London. REBMAN COMPANY, New York.

What Shall I Eat? A Manual of Rational Feeding. By Dr. F. X. Gouraud. With a Preface by Professor Armand Gautier, of Paris. Only authorised translation into the English language. By Francis J. Rebman. Price 6*s.* net.

The Mechanism of Life. By Dr. Stéphane Leduc, Professeur à l'Ecole de Médecine de Nantes. Translated by W. Deane Butcher. Price 6*s.* net.

Public Hygiene. By Thos. S. Blair, M.D., Neurologist, Harrisburg, Pennsylvania, Hospital. Assisted by Numerous Contributors. In Two Volumes. Price 42*s.* net.

An International System of Ophthalmic Practice. Edited by Walter L. Pyle, A.M., M.D., Philadelphia. Therapeutics. By Dr. A. Darier, Paris. Translated by Sydney Stephenson, M.B., F.R.C.S. Lond. Price 17*s.* 6*d.* net.

RIDER, WILLIAM, AND SON, LIMITED, 164, Aldersgate-street, London, E.C.

Death: its Causes and Phenomena, with Special Reference to Immortality. By Hereward Carrington, late Member of the Council of the American Society for Psychical Research, and John R. Meader ("Graham Hood"), Member of the American Statistical Society and of the Society for Psychical Research. Price 8*s.* 6*d.* net.

Abnormal Psychology. By Isador H. Coriat, M.D., Second Assistant Physician for Diseases of the Nervous System, Boston City Hospital. Price 5*s.* net.

STANFORD, EDWARD, 12, 13, and 14, Long Acre, London, W.C.

Stanford's Indexed Atlas of the County of London, with Parts of the Adjacent Boroughs and Urban Districts. With a Preface by Sir Laurence Gomme. Price, cloth, 7*s.* 6*d.* net; leather, 10*s.* 6*d.* net.

SURGERY PUBLISHING COMPANY, 92, William-street, New York.

Plaster of Paris and How to Use it. By Martin W. Ware, M.D., New York, Adjunct Attending Surgeon, Mount Sinai Hospital. Second edition, revised and enlarged. Price, cloth, square form, $1.25; De Luxe leather, $2.50.

THACKER, SPINK, AND CO., Calcutta. THACKER AND CO., 2, Creed-lane, London, E.C.

A Monograph of the Anopheline Mosquitoes of India. By S. P. James, M.D., D.P.H., I.M.S., Secretary to the Committee for the Study of Malaria in India; and W. Glen Liston, M.D., D.P.H., I.M.S., of the Research Laboratory, Parel, Bombay. Second edition, rewritten and enlarged. Price Rs.16, net, or £1 5*s.* in England.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.

The Medical Diseases of Children. By Reginald Miller, M.D. Lond., M.R.C.P. Price 12*s.* 6*d.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

EVANS, D. GORDON, M.B., B.S. Lond., has been appointed Casualty Officer to the Royal Free Hospital.

FENTON, FREDERICK E., F.R.C.S. Edin., has been appointed Surgeon to King Edward Memorial Hospital, Ealing.

FLOOD, J. W., L.M., L.R.C.P. & S. Irel., has been appointed Assistant Surgeon to the South Dispensary, Liverpool.

HOLDEN, S. J. C., M.B., Ch.B., D.P.H. Liverp., has been appointed Assistant Medical Officer of Health and School Medical Officer for St. Helens.

HORGAN, J. BOWRING, M.B., Ch.B. R.U.I., has been appointed Oculist, Rhinologist, and Laryngologist to the North Charitable Infirmary, Cork.

MCCONAGHEY, J. C., M.D. Edin., has been appointed Medical Superintendent of the Cheshire County Asylum.

PIERCE, W. R., M.D. Liverp., has been appointed Head Surgeon to the South Dispensary, Liverpool.

ROBERTS, J. P., M.B., Ch.B. Liverp., has been appointed Assistant Surgeon to the South Dispensary, Liverpool.

STARLING, H. J., M.D. Lond., has been appointed Honorary Anæsthetist to the Norfolk and Norwich Hospital.

WATSON, HENRY, M.B., Ch.B. Aberd., has been appointed Honorary Anæsthetist to the Norfolk and Norwich Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHTON-UNDER-LYNE, DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Assistant House Surgeon. Salary £90 per annum, with board, residence, and laundry.

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £80 per annum, with board and residence.

BARNSLEY, BECKETT HOSPITAL.—Second House Surgeon, unmarried. Salary £100 per annum and all found.

BATH ROYAL UNITED HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £80 per annum, with board and washing.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant for three months. Salary at rate of 52 guineas per annum.

BRIGHTON COUNTY BOROUGH ASYLUM, Haywards Heath.—Locum Tenens Assistant Medical Officer. Salary £4 4s. a week.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £70 per annum, with board, lodging, and washing.

CAPE TOWN, SOUTH AFRICAN COLLEGE.—Professor of Physiology. Salary £500 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £70 per annum, with board, apartments, and laundry.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, washing, and residence.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant Resident Medical Officer for six months, unmarried. Salary at rate of £50 per annum, with board, apartments, and laundry

EXMINSTER, DEVON COUNTY ASYLUM.—Third Assistant Medical Officer. Salary £140 per annum, all found.

HASTINGS, EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary at rate of £50 per annum, with rooms, board, and washing.

HUDDERSFIELD INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, residence, and washing.

INDIAN MEDICAL SERVICE, India Office, London.—Twelve Commissions in His Majesty's Indian Medical Service.

KING'S LYNN, WEST NORFOLK AND LYNN HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

LEICESTER INFIRMARY.—Assistant House Physician for six months. Salary at rate of £60 per annum, with board, apartments, and washing.

LIVERPOOL ROYAL INFIRMARY.—Honorary Surgeon.

LONDON MISSIONARY SOCIETY.—Three Medical Men for Missionary Service.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board and residence.

MANCHESTER, CRUMPSALL WORKHOUSE.—Junior Resident Assistant Medical Officer, unmarried. Salary £110 per annum, with apartments, washing, attendance, &c.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon, unmarried. Salary £150 per annum, with rooms.

MANCHESTER ROYAL INFIRMARY CONVALESCENT HOSPITAL, Cheadle.—Assistant Medical Officer for six months, unmarried. Salary at rate of £80 per annum, with board and residence.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Two House Surgeons. Salary at rate of £50 per annum, with board and residence.

NEWCASTLE-UPON-TYNE, ROYAL VICTORIA INFIRMARY.—Two House Surgeons.

NEW HOSPITAL FOR WOMEN, Euston-road.—Pathologist, House Physician, Obstetric Assistant, and Two Clinical Assistants (all females).

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with board, lodging, and washing.

NOTTINGHAM CHILDREN'S HOSPITAL.—House Surgeon (female) for six months. Salary at rate of £100 per annum, with apartments, board, and washing.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary £100, with board, lodging, and washing. Also Locum Tenens. Salary at rate of £3 3s. per week, with board, lodging, and washing.

NOTTINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer, unmarried. Salary £130 per annum, with apartments, board, washing, and attendance.

PLAISTOW FEVER HOSPITAL, London, E.—Second Assistant Medical Officer, unmarried, for six months. Salary at rate of £100 per annum, with rooms, board, and washing.

PRESTWICH, COUNTY ASYLUM, Manchester.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, washing, &c.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Honorary Physician or Surgeon to X Ray and Electrical Department. Also Junior House Physician for six months. Salary £50 per annum, with residence, board, and laundry.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Examiners, Professors and Lecturers.

ROYAL EAR HOSPITAL, Soho.—House Surgeon. Salary £40 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS EYE HOSPITAL), City-road, E.C.—Senior House Surgeon, Second House Surgeon, and Third House Surgeon for eight months. Salary, Senior House Surgeon at rate of £100 per annum, Second House Surgeon at rate of £75 per annum, and Third House Surgeon at rate of £50 per annum, all with board and residence.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, W.C.—Clinical Assistants for six months.

ST. MARY'S HOSPITAL, Paddington, W.—Physician-in-Charge of Out-patients.

ST. THOMAS'S HOSPITAL.—Physician-in-Charge of Out-patients.

SHEFFIELD ROYAL INFIRMARY.—Senior Assistant House Surgeon, Junior Assistant House Surgeon, and Seventh Resident Medical Officer. Salaries £70, £65, and £60 per annum respectively, with board and residence.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon for six months. Salary £60 per annum, with rooms, board, and washing.

SOUTHWARK UNION INFIRMARY, East Dulwich-grove.—Assistant Medical Officer. Salary £120 per annum, with board, lodging, and washing.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

TAUNTON, TAUNTON AND SOMERSET HOSPITAL.—House Surgeon. Salary £120 per annum, with board, lodging, and laundry.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £40, with board, lodging, and laundry.

WAKEFIELD GENERAL HOSPITAL.—Junior House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

WEST HAM UNION INFIRMARY, Whipps Cross-road, Leytonstone, N.E.—Fourth Assistant Resident Medical Officer. Salary £120 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

YORK DISPENSARY.—Two Resident Medical Officers, unmarried. Salary £140 per annum, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Buckingham, in the county of Bucks; and at Barnard Castle, in the county of Durham.

Births, Marriages, and Deaths.

BIRTHS.

BETT.—On May 6th, at Dartmouth, the wife of Fleet-Surgeon William Bett, R.N., of a daughter.

CRAWFORD.—On May 5th, 1911, at Kilmeny, Ingrow, Keighley, Yorks, the wife of John C. Crawford, M.B., C.M., of a son.

LAING.—On May 3rd, at Montagu-street, Portman-square, W., the wife of Dr. J. T. C. Laing, of a daughter.

REYNOLDS.—On May 7th, at Moreton, Chislehurst-road, Sidcup, Kent, the wife of Austin Edward Reynolds, M.R.C.S. Eng., &c., of a son.

TINNE.—On May 3rd, at Oak Cottage, Grassendale, Liverpool, the wife of Dr. P. F. Tinne, of a daughter.

MARRIAGES.

DICKS—HOW.—On May 3rd, Eustace Dicks, M.D., B.S. Lond., son of Mr. F. R. Dicks, Leckhampton Hill, Cheltenham, to Ethel, youngest daughter of Mr. and Mrs. How, of Torrington, Cheltenham.

PEACOCK—TREDINNICK.—On April 27th, at Craven Arms, Shropshire, William Henry Peacock, West African Medical Staff, Southern Nigeria, to Mary Hamilton, only daughter of Dr. Ernest Tredinnick, of Peniu House, Craven Arms, Shropshire.

DEATHS.

EVANS.—On May 4th, at Hertford, Ernest Richard Evans, M.R.C.S., aged 66 years.

JONES.—On May 2nd, at Craven Hill-gardens, William Watkin Cadwaladr Jones, M.R.C.S., L.R.C.P., L.D.S. R.C.S. Eng., aged 34 years.

PEDLEY.—On April 27th, at Southgate-street, Winchester (suddenly), George Aston Pedley, M.R.C.S., L.R.C.P., L.D.S.

RUTHERFORD.—On May 7th, at Edinburgh, after an operation, Thomas Rutherford, M.B., C.M.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HEALTH AND SANITATION IN NORTHERN NIGERIA.

A REPORT on the Blue-book of Northern Nigeria for the year ending March 31st, 1910, has been forwarded to the Colonial Office by the Governor, Sir H. Hesketh Bell, and presented to both Houses of Parliament. The average number of Europeans resident in the Protectorate during the year, including both officials and non-officials, but excluding those engaged in the northern extension of the Lagos Railway, was 544 (527 males and 17 females). The native population is estimated at over 8,000,000. There were 13 deaths among the Europeans during the year—9 from disease and 4 from accident. The number of Europeans invalided during the year was 67. The general character of the prevalent diseases showed little change. Malaria still accounts for the greatest number of cases of illness in the Protectorate. The total number of admissions to hospitals amongst Europeans from this disease during the year was 443. There were 13 cases of blackwater fever admitted to hospital, with 3 deaths. The most unhealthy months for Europeans were August, June, and January. Amongst the natives the death-rate, so far as can be gathered from the returns of those treated, was much the same throughout the various months. There were no serious epidemics and the general health was good. There was a large increase in the number of natives under treatment at the various Government hospitals and dispensaries, the total being 22,847, exclusive of 3271 cases of minor injuries treated on the Baro-Kano Railway. In the previous year the number was 18,032. There were 3467 pauper patients treated during the year. One case of diphtheria—the first recorded in Northern Nigeria—occurred in a European at Sokoto and ended fatally. The average number of Europeans employed on the Baro-Kano Railway throughout the year was 140. Among these 1 death and 21 invaliddings occurred. During the year a European hospital, with a staff of European nursing sisters, has been opened on Baro Hill for the admission of cases coming down the line. A well-equipped native hospital has also been established. Seven cases of sleeping sickness were met with during the year throughout the Protectorate. From the reports from the various provinces it would appear that sleeping sickness—though only sporadic cases are now found—was responsible in the past for many deaths, and, although native evidence as to the nature of epidemics is not always reliable, there is no doubt that the disease has existed for many years in the provinces of Kabba, Bassa, Banchi, Katagum, and Sokoto. There were 2662 successful vaccinations performed during the year. All Government employees, native soldiers, and police, who have not had small-pox, are vaccinated whenever possible, as well as increasing numbers of the inhabitants of native towns. The powdered lymph now used has proved much more effective than the tubes of ordinary lymph formerly supplied, and considerable success has been attained in the more northern provinces, where all previous attempts had failed. Inoculation is widely practised in most parts of the country in times of epidemics by the natives themselves. The European stations are generally in as good a sanitary condition as circumstances will permit, financial considerations alone, in most cases, being responsible for deficiencies in this respect. Improvements are being effected from year to year. Better quarters are being provided, and as railway communication is being established much ill-health now caused by the hardships and risks of travel will be avoided. As the country is opened up medical officers are visiting the various native towns and villages in their districts, with a view to investigating the incidence and nature of the disease met with and advising the local headmen as to the best measures for effecting improvements in sanitation.

THE BERI-BERI QUESTION IN MANILA.

THE report of the Tropical Diseases Board from Manila is of great importance. It discusses very carefully the influence of the milling of rice, in its various degrees, on the etiology of beri-beri, which was at one time markedly prevalent among the Filipino Scouts. Like other grains, rice is at first enclosed in a husk, which is removed by passing the grain between horizontal mill-stones and subsequent winnowing. At this stage the rice consists of a pericarp adhering to and enclosing the endosperm. The pericarp contains all the phosphoric acid of the grain, and it may have any colour from white to black, but in the Philippines is generally brick-red or yellowish white. The endosperm has a thin outer envelope, the aleurone layer, in which is the albuminous material of the seed and most of the fat; it is adherent to the pericarp on the outside and on the inside to the rest of the endosperm of the seed, which is wholly composed of starch. The object of "milling" is the removal of the coloured pericarp; it is æsthetic in purpose, making the rice-grains whiter and more polished. "Cured" rice is parboiled and dried before milling, so that the pericarp and aleurone layers have become more adherent, and are less completely removed by milling. Consequently it remains unusually dark in colour when finished. During milling the rice passes between a conical stone revolving on a vertical axis within a metal gauze case fitted closely to it. Friction between stone and netting rubs off the pericarp and the adherent aleurone layer, and this the more completely as the process continues longer, as the stone moves faster, or as the netting and stone are closer together. "Highly milled" rice has lost all the pericarp and most of the aleurone layer; "under-milled" rice is rougher and less pearly white. Rice which contains more than 0·4 per cent. of phosphorus pentoxide will not cause beri-beri, and a naked-eye examination of a sample will tell an experienced man whether too much of the pericarp has been removed, and so whether the rice will cause beri-beri amongst the natives, whose main ration it is.

THE FOUNDER OF "THE LANCET."

"EARLY in the year," writes a correspondent, "several interesting paragraphs appeared in THE LANCET dealing with allusions in contemporary letters and journals to the career of the original Thomas Wakley. Recently you announced the 'Life and Letters of Sir John Hall, M.D., K.C.B., F.R.S.E.,' by Mr. S. M. Mitra, with an Introduction by Rear-Admiral Sir Massie Blomfield, a Crimean veteran. Sir John Hall's action in the great Hounslow flogging case in the late 'forties' raised considerable discussion in Parliament, and figured in our law courts in an attempt to settle the rights and privileges of the medical profession against coroners, medical men or no, the coroner in question being Thomas Wakley." Some of our readers may be acquainted with the story of the Hounslow flogging case, but to some it may be unknown. A soldier who had been flogged as a military punishment developed in hospital very alarming symptoms, and the then Director-General of the Army Medical Department, Sir James M'Grigor, instructed Dr. John Hall, a first-class staff surgeon, to proceed to Hounslow, where the military hospital was situated, and report to headquarters upon the condition of the patient. Dr. Hall only arrived in time to see the man die. Subsequently Dr. Hall, together with two other medical men, made a post-mortem examination, and the certificate, "drawn up for the satisfaction of the officer commanding the Seventh Hussars," stated that "the cause of death was in no wise connected with the corporal punishment." The vicar, who should have buried the body, finding discrepancies in the official accounts of the cause of death, communicated with Wakley, then coroner for Middlesex, who held an inquest. After two adjournments due to the incompleteness of the first post-mortem examinations, Mr. (afterwards Sir) Erasmus Wilson was appointed by Wakley to make a third and complete post-mortem examination. The jury, after hearing Erasmus Wilson's evidence, came to the conclusion that death was the result of a severe and cruel flogging. Great public excitement followed, and the facts which were made evident at this inquest immediately led to great modifications in, and eventually to the abolition of, the brutal practice of flogging in the army.

A HEALTH AUTHORITY IN SESSION.

A CRUSADER against consumption, tilting in the Cheshire county papers as "Drax," but recognised as a well-known author, draws a striking picture from life of 15 members of a local authority, with four officials, nine reporters, and six ratepayers, making together 34 persons, sitting on a warm May evening "for two mortal hours" in "a bandbox of a room," with every air-hole sealed, receiving the report of their medical officer of health on the prevalence of consumption in their district. He concludes a powerful satire with the novel suggestion that a chief set-piece at the Coronation illuminations should be the didactic one of the figure in fairy lights of the Goddess of Health seated at an open window.

THE BRISTOL GIANT.

IN our issue of April 29th we published an annotation entitled, "A Reminiscence of an Irish Giant," which dealt shortly with Patrick Cotter, who was born at Kinsale in Ireland in 1761 and died near Bristol in 1806. Our attention has since been drawn to an interesting pamphlet by Dr. Edward Fawcett, professor of anatomy in the University of Bristol, entitled, "Patrick Cotter—the Bristol Giant," which was published in 1909 by the Royal Anthropological Institute of Great Britain and Ireland. After giving a very complete account, gleaned from a number of contemporary prints, of Cotter as he appeared during life, Professor Fawcett describes in detail his own examination of the giant's remains carried out almost exactly 100 years after death, whilst alterations were being made to the chapel in which he was buried. Careful measurements were made of all the bones, and from these Professor Karl Pearson estimates Cotter's height at not more than 7 ft. 10 in., which is considerably below all contemporary estimates, except that of a sceptical surgeon named Blair who saw the giant two years before death. Nevertheless, Professor Marshall thinks it possible that Cotter was, as he claimed, the tallest man of his age, and he has little doubt from the appearance of the skull and the casts of the hand that the cause of this great height was acromegaly. The pamphlet states that Cotter's watch was bought at a sale of his effects for 70 guineas, and weighed 1 lb. We learn from

our neighbours, Messrs. E. Dent and Co., Limited, 61, Strand, W.C., that this must have been one of the large "pair case" watches, with a dial about 3 in. in diameter, which were not uncommon at that period and often weighed as much as a pound. The confusion which has arisen between Cotter and O'Byrne, the other famous Irish giant mentioned in our annotation, was due to the adoption by Cotter for purposes of advertisement of the name O'Brien. He is styled Patrick Cotter O'Brien on his coffin plate, where his height is given as 8 ft. 4 in. He lived in Bristol for the greater part of his life, and various relics of him are preserved in local museums.

SKIN GRAFTING IN THE SIXTEENTH CENTURY.

WITH reference to the successful replacement of portions of the nose which had been slashed off in German duels, mentioned in the annotation on "Skin Grafting" in THE LANCET of May 6th, Mr. William Jones, resident librarian of the Liverpool Medical Institution, sends us the following extract from a black-letter volume in the library of that institution. The title of the book is "A Short Discours upon Chirurgie, Leonardo Phioravanti, 1580," and the case is headed, "The cure of one that had his nose cut off, and set on agayne":—

> "In that time when I was in Africa there happened a straunge case and that was thus:—A certeine Gentleman a Spaniard that was called Il Signor Andreas Gutiero, of the age of XXIX yeares, uppon a time walked in the fielde, and fell at words with a souldiour, and began to drawe his weapon, the soldiour seing y', stroke him with the left hande and cut off his nose, and there fell downe in the sande, than I happened to stande by, and tooke it up, and pysed thereon to wash away the sande, and stytched it on againe verye close, I dressed it with our Balsamo Artificiato and bound it up, and so let it remain VIII dayes, thinking that it woulde have come to matter: nevertheless when I did unbinde it, I founde it fast conglutinated, then I dressed it onelye once more and hee was perfectly whole, so that all Naples did mervaile there at, as is well knowne, for the saide S. Andrea doth live yet, and can testifie the same."

Phenad asks: "Can anyone tell me where I can obtain a list of the public and private asylums in and near Salisbury?" A "List of County and Borough Asylums, Metropolitan and Provincial Licensed Houses, and Hospitals Receiving Lunatics," will be found in the Local Government Directory for the current year (Knight and Co., London, 4A, La Belle Sauvage, Ludgate-hill, E.C.; price 8s. 6d.). There is also a section "Lunatic Asylums and Hospitals for the Insane" in "Burdett's Hospitals and Charities" for the current year.

Locum.—The rule, of course, is that all fees earned by the locum-tenent are the property of his principal. But in the particular case mentioned by our correspondent we think that the circumstances are exceptional and that the honorarium for the course of lectures might well belong to the locum-tenent. If the same question were submitted to the principal in a friendly way it is probable that he would see it in this light, but without a previous arrangement the locum-tenent cannot claim the fee.

Subscriber asks: "Is it legal under the Medical Act for a registered medical practitioner to put Dr. on his plate and visiting cards, that practitioner not being a graduate?" It is not illegal, but it is naturally resented by some medical graduates, and the adverse views of the General Medical Council are well known.

L.R.C.P. Edin.—We do not deal with the point at any length this week. Our belief is that no great alteration in private practice will take place in exactly the direction indicated.

Sudor.—As the Chancellor's proposals have been generally read, the value of such a practice should go up rather than down.

J. E. S.—The pamphlets sent by our correspondent are most timely. This matter is now under our notice.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1911:—

April–October.—Rome Exhibition (United Italy's Jubilee).
,, 29th–Oct. 26th (Turin).—International Exhibition.
May 3rd–Oct. 31st (Glasgow).—Scottish Exhibition.
,, 6th–Oct. 31st (Dresden).—International Hygiene Exhibition.
,, 12th–Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
,, 13th–27th (London, Agricultural Hall).—Chemical Exhibition.
,, 18th–June 3rd (London).—Royal Naval and Military Tournament.
,, 18th and 19th (London, Ontario).—Eleventh Annual Meeting, Canadian Association for the Prevention of Tuberculosis.
,, 18th–October 31st (London, Shepherd's Bush).—Coronation Exhibition.
,, 19th–Oct. 31st (London).—Earl's Court Exhibition.
,, 23rd–25th (Atlantic City).—American Gynæcological Society.
,, 25th–27th (Boston).—American Dermatological Association.
May 29th–31st (Philadelphia).—American Laryngological Association.
,, 30th (The Hague).—International Congress on Opium.
,, 30th–June 2nd (London).—National Conference on the Prevention of Destitution.
,, (Paris).—International Sanitary Conference (Prevention of Plague).
,, (Washington).—Conference on the Protection of Industrial Property. (Question of False Marking of Goods.)
June 5th–8th (Kolberg, Prussia).—Fifth International Congress of Thalassotherapy.
,, 7th–9th (Montreal).—Canadian Medical Association.
,, 7th–10th (Munich).—Fourteenth Congress of the German Gynæcological Society.
,, 12th and 13th (Dresden).—Eighth Tuberculosis Physicians' Meeting.
,, 13th (Cork).—Annual Meeting of the Irish Medical Association.
,, 19th–22nd (Denver, Col.)—Sixty-seventh Annual Meeting of the American Medico-Psychological Association.
,, 26th and 27th (Los Angeles, Cal.).—Thirteenth Annual Meeting of the American Proctologic Society.
,, 27th–30th (Los Angeles, Cal.).—American Medical Association.
,, (Montreal).—American Climatological Society Meeting.
June, July, and August (Squirrels Heath, Romford).—Town Planning and Modern House and Cottage Exhibition.
July 6th and 7th (London).—Imperial Health Congress.
,, 24th–27th (Portsmouth).—British Pharmaceutical Conference.
,, 24th–28th (London).—Second International Congress of Urology.
,, 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
,, 25th–28th (Birmingham).—British Medical Association, Seventy-ninth Annual Meeting.
,, 28th–29th (London).—Universal Races Congress.
,, (Bergen).—Seventh Norwegian Congress of Internal Medicine.
August 12th–30th.—E.M.I. (Enseignement Médico-mutuel International) Tour in Scandinavia.
,, 15th–21st (Dublin).—Royal Institute of Public Health.
,, 28th–Sept. 11th (South-East of France).—Eleventh "Voyage d'Études Médicales."
,, 30th–Sept. 2nd (Berlin).—Third International Laryngo-Rhinological Congress.
,, 30th–Sept. 6th (Portsmouth).—British Association.
,, (Carmarthen).—Welsh National Eisteddfod.
Sept. 4th–9th (Yarmouth).—Sanitary Inspectors' Association. Annual Conference.
,, 11th–13th (Berlin).—National Congress for the Study and Prevention of Infantile Mortality (*Gouttes de Lait*).
,, 11th–13th (Vienna).—German Urological Society.
,, 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
,, 12th–15th.—Celebration of the 500th Anniversary of the Foundation of the University of St. Andrews.
,, 18th–23rd (Sydney).—Australasian Medical Congress.
,, 18th–24th (Turin).—Fourth National Congress of Hygiene.
,, 23rd–Oct. 21st (London, Olympia).—Electrical Exhibition.
,, 24th–30th (Rome).—International Congress on Tuberculosis.
,, 25th–29th (Karlsruhe).—Eighty-third Meeting of German Physicists and Physicians.
,, 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.
,, 26th–30th (Brussels).—Third Congress of the International Society of Surgery and Exhibition of Fractures.
,, 29th (Edinburgh).—Association of Veterinary Officers of Health. Annual Meeting.
September (Genoa).—International Exhibition of Marine Hygiene.
,, (London).—Bakers' and Confectioners' Exhibition.
September–November (Antwerp).—International Exhibition of Alimentation, Brewing, Wines, and Liqueurs.
Oct. 1st–4th (Liége).—Second Congress of Alimentation.
,, 2nd–5th (Turin).—International Congress of Pathology.
,, 2nd–7th (Dresden).—Third International Housing Congress.
,, 3rd–6th (London).—Dairy Show.
October (Cologne).—International Congress of Criminal Anthropology.
,, (Paris).—First Congress of the International Medical Association for the Prevention of War.
,, (London).—London Medical Exhibition.
November (London).—Motor Exhibition.
,, (Manchester).—Smoke Abatement Exhibition.
Dec. 4th–9th (Havana, Cuba).—American Public Health Association.
(Date not fixed) (Rome).—International Exhibition of Social Hygiene.

In 1912:—
Jan. 20th–27th (Hong-Kong).—Second Biennial Congress of the Far Eastern Association of Tropical Medicine.
Spring (London).—Second Optical Convention.
Sept. 23rd–28th (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.
September (Prague).—International Congress of Radiology and Medical Electrology.
September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
(Budapest).—Tuberculosis Exhibition.

In 1913:—
Aug. 6th–12th.—(London).—Seventeenth International Congress of Medicine.
(London).—Historical Medical Exhibition. (Organised by Mr. Henry S. Wellcome.)

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

MONDAY.

SECTION OF BALNEOLOGY AND CLIMATOLOGY (Hon. Secretaries—F. A. de T. Mouillot, A. Manuel).

The Samuel Hyde Memorial Lectures by Dr. R. Fortescue Fox.

Medical Hydrology, the Science of Water and of Waters, with a Plea for its Practice and Teaching in Britain.

Lecture I. May 15th, at 5 P.M.:—Factors in the Use of Water and of Waters. Physical Therapy. Chairman: Sir Hermann Weber.

Lecture II. May 17th, at 5 P.M.:—Modern Hydrotherapeutics. Chairman: Sir Dyce Duckworth, Bt.

Lecture III. May 19th, at 5 P.M.: Medicinal Springs: their Characters and Uses. Chairman: Dr. Theodore Williams, M.V.O.

Members of all Sections are specially invited to attend these Lectures.

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—H. Charles Cameron, H. H. Dale): at 4.30 P.M.

Annual Meeting.—Election of Officers and Council for Session 1911-1912.

Papers:

Dr. F. W. Price: The Effect of Aconite upon the Pulse-rate.

Dr. M. D. Silberberg: The Effect of Atropine on Cases under the Influence of Digitalis.

THURSDAY.

DERMATOLOGICAL SECTION (Hon. Secretaries—H. G. Adamson, J. H. Sequeira), at 11, Chandos-street, W.: at 5 P.M.

Annual Meeting.—Election of Officers and Council for Session 1911-1912.

Dr. H. G. Adamson: (1) Large Pigmented Angio-sclerotic Nævus, with Microscopic Sections; (2) Two Cases of Small Follicular Syphilide; (3) Cultures from a Case of Eczematoid Ringworm of the Toes.

Dr. Graham Little: (1) Leucoderma Syphiliticum in a Male; (2) Urticaria Pigmentosa.

Dr. George Pernet: Drawing of a Case of Nodular Lupus Erythematosus.

Dr. Sequeira: Case of Leprosy.

And Four Cases by Mr. G. W. Dawson.

FRIDAY.

OTOLOGICAL SECTION (Hon. Secretaries—H. J. Marriage, Sydney Scott), at 11, Chandos-street, W.: at 4.30 P.M.

Annual Meeting.—Election of Officers and Council for Session 1911-1912.

Cases and Specimens

Will be shown by Dr. Watson-Williams, Mr. Arthur Cheatle, Dr. Jobson Horne, Mr. A. L. Whitehead, Mr. Charles Heath, Mr. F. H. Westmacott, and Mr. G. J. Jenkins.

ELECTRO-THERAPEUTICAL SECTION (Hon. Secretaries—Reginald Morton, G. Harrison Orton), at the Maison Jules, 86, Jermyn-street, W.: at 7.15 P.M.

Annual Meeting.—Election of Officers and Council for Session 1911-1912.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—Conversazione and Oration. Orator—Dr. Wm. Pasteur.

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover-square, W.

WEDNESDAY.—8 P.M., Exhibition of Pond Life. Mr. J. E. Barnard: A Method of Disintegrating Bacteria and other Organic Cells.—Mr. T. W. Butcher: Structural Details of Coscinodiscus Asteromphalus.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

FRIDAY.—8.30 P.M., A Discussion on the Prophylaxis of Malaria by Quinine (opened by Dr. C. Brown). Dr. W. I. Bruce (Chinde): The Nature of Zambesi Fever.—Dr. Surveyor (Bombay): Cultural Characteristics of a Variety of the Streptothrix of White Mycetoma.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. C. Fox: Clinique (Skin). 5.15 P.M. Lecture:—Mr. A. Lawson: Glaucoma (illustrated by lantern slides).

TUESDAY.—4 P.M., Dr. G. Rankin: Clinique (Medical). 5.15 P.M., Lecture:—Dr. H. C. Thomson: Cerebral Localisation.

WEDNESDAY.—4 P.M., Mr. D. C. L. Fitzwilliams: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. A. Lane: Fractures (lantern illustrations).

THURSDAY.—4 P.M., Dr. C. O. Hawthorne: Clinique (Medical). 5.15 P.M., Lecture:—Dr. H. Campbell: The Cerebral Circulation.

FRIDAY.—4 P.M., Dr. D. Grant: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Bernstein: Clinical Pathology.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Armour: Head Injuries.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Mr. Armour: Head Injuries.

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. R. H. Cole: Delusional Insanity.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Clinical (with cases).

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Medical Registrar: Demonstration of Cases in Wards. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).

TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. H. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Mr. Carson: The Significance of Blood in the Fæces.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. H. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Dr. A. H. Giles: Faulty Female Formations.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. H. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 4.30 P.M., Special Lecture:—Dr. Lister: Phthisis Treated with Tuberculin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. Special Lectures: 2.15 P.M., Dr. F. Taylor: Leukæmia. 5 P.M., Dr. M. Horne: Anæsthetics.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. McGavin: The Partial Application of Spinal Analgesia, with some Remarks on Bier's Intravenous Method.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

TUESDAY.—5.15 P.M., Demonstration:—Mr. O. L. Addison: Diseases of Joints—Syphilitic Affections, Diagnosis, Treatment (Special Post-Graduate Course.)

THURSDAY.—4 P.M., Dr. Batten: Demonstration of Selected Medical Cases.

FRIDAY.—5.15 P.M., Demonstration:—Mr. O. L. Addison: Diseases of Joints—Tuberculous Hip, Differential Diagnosis, &c. (Special Post-Graduate Course.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY AND FRIDAY.—3.30 P.M., Clinical Lectures:—Dr. J. Taylor: Muscular Atrophy.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Dr. Maguire: The After-Effects of Bronchitis.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3.45 P.M., Lectures:—Dr. J. Atkinson: Nose.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—5 P.M., Mr. W. Hampson: Electric Currents—Physical Action. (Post-Graduate Lecture.)

THURSDAY.—5 P.M., Dr. W. Griffith: The Pathology of the Epidermis. (Post-Graduate Lecture.)

UNIVERSITY OF LONDON (UNIVERSITY COLLEGE), Institute of Physiology.

FRIDAY.—4.30 P.M., Dr. W. M. Bayliss: The Mechanism of Oxidation in Plants and Animals. (Lecture III.)

GRESHAM LECTURES, City of London School, Victoria Embankment, E.C.

TUESDAY.—6 P.M., Dr. F. M. Sandwith; Measles—Some Previous Epidemics of Measles.

WEDNESDAY.—6 P.M., Dr. F. M. Sandwith: Measles—Present Knowledge of Measles.

THURSDAY.—6 P.M., Dr. F. M. Sandwith: Plague—The Black Death.

FRIDAY.—6 P.M., Dr. F. M. Sandwith: Plague—The Plague of To-day.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. C. H. Melland: Some Conditions Associated with Disease of the Thyroid Gland. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (17th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.20 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (18th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (20th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 10th, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
May 4	29·86	W.	0·11	108	60	45	46	50	Cloudy
,, 5	30·04	W.	...	111	61	44	48	52	Fine
,, 6	30·27	N.W.	...	103	61	47	47	52	Fine
,, 7	30·16	S.W.	...	103	66	47	50	53	Fine
,, 8	30·18	S.E.	...	113	67	47	49	56	Fine
,, 9	30·03	E.	...	116	71	47	51	56	Fine
,, 10	29·83	N.E.	...	117	74	49	50	52	Fine

The following journals, magazines, &c., have been received:—Proceedings of the Royal Society of Medicine, Public Health, Edinburgh Medical Journal, Revue de Psychiatrie, Bulletin de la Société Royale des Sciences Médicales et Naturales de Bruxelles, Medical Review, Archives of the Roentgen Ray, La Clinique Infantile, La Policlinique, Bulletins et Mémoires de la Société de Radiologie Médicale de Paris, Nederlandsch Tijdschrift voor Geneeskunde, Archives of Internal Medicine, Archives Internationales de Neurologie, American Journal of Medical Sciences, Journal of the Royal Army Medical Corps, Footsteps, Archives Générales de Médecine, Nation in Arms, Local Government Review, Archives de Médecine et de Pharmacie Militaires, Chirurgia, Archives de Médecine et Pharmacie Navales, Æsculape, Bulletin de l'Association Française pour l'Étude du Cancer, Canadian Journal of Medicine and Surgery, St. Paul Medical Journal, Detroit Medical Journal, Medico-Legal Journal, Military Surgeon, Maryland Medical Journal, Jahrbuch für Kinderheilkunde, Review of Neurology and Psychiatry, Recueil d'Ophthalmologie, Journal of Tropical Medicine and Hygiene.

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